Commercial Offering for Installers & EPCs
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**About SolarEdge**

**About us**

In 2006, SolarEdge revolutionized the solar industry by inventing a better way to collect and manage energy in PV systems. Today, we are a global leader in smart energy technology. By deploying world-class engineering capabilities and with a relentless focus on innovation, we create smart energy products and solutions that power our lives and drive future progress.

**Vision**

We believe that continuous improvement in the ways we produce and manage the energy we consume will lead to a better future for us all.

**Bankability**

- Approved by major banks and financial institutions worldwide
- SolarEdge (SEDG) is traded on NASDAQ
- Our financial strength and stability, combined with our cutting-edge technology, has propelled us to become one of the largest inverter manufacturers in the world

**Global outreach**

- Systems installed in over 130 countries across five continents
- Sales via leading integrators and distributors
- Follow the sun call centers
- Local teams of sales, service, marketing, and training experts
- Global manufacturing with tier 1 electronic manufacturing service companies

**Shipping since 2010**

- Over 2 million inverters shipped worldwide
- SolarEdge’s monitoring platform continuously tracks over 1.5 million installations across the globe

**Corporate social responsibility**

As a global leader in smart energy technologies, SolarEdge is committed to a sustainable world and is in full compliance with international standards on quality and control, ethical conduct, and environmental protection.

**Patents**

SolarEdge has a vast portfolio of intellectual property, with hundreds of awarded patents and patent applications

**Reliability**

- 25-year power optimizer warranty and 12-year inverter warranty, extendable to 20 years
- SolarEdge products and components undergo rigorous testing, and have been evaluated in accelerated life chambers
- Reliability strategy includes proprietary application specific ICs (ASIC)

**Power optimizers shipped (cumulative)**

- Received nearly 30 awards from prestigious organizations including Red Herring, Frost & Sullivan, Intersolar, the Stratus Award, and the Edison Awards™

**ISO 9001 CERTIFIED**

**WEEC COMPLIANT**
The Importance of Inverter Selection

Commercial rooftop installation cost breakdown*

Inverters account for less than 10% of the system cost but:
- Manage 100% of system production
- Influence up to 20% of system cost
- Control O&M expenses through PV asset management solutions

Therefore, the inverter selection is critical for the long term financial performance of a PV system as it can maximize energy production and reduce lifetime costs.

Commercial rooftop installation cost breakdown*

<table>
<thead>
<tr>
<th>Component</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inverter</td>
<td>6%</td>
</tr>
<tr>
<td>BOS</td>
<td>8%</td>
</tr>
<tr>
<td>PV modules</td>
<td>50%</td>
</tr>
<tr>
<td>Installation labor</td>
<td>20%</td>
</tr>
<tr>
<td>Racking materials</td>
<td>8%</td>
</tr>
<tr>
<td>Other</td>
<td>8%</td>
</tr>
</tbody>
</table>

* Based on NREL 2017
Maximum Energy Yield in Commercial Installations

Unavoidable in commercial installations, module-level mismatch occurs when modules in a string have different Maximum Power Points (MPPs). Arising from a variety of sources, the mismatch decreases the energy yield of the entire string.

### Traditional string inverter

- MPPT per string - all modules operate at same current, regardless of their individual MPP
- Weak modules reduce the performance of all modules in the string or are bypassed
- Power losses due to module mismatch

### SolarEdge DC optimized inverter solution

- Module-level MPPT - current & voltage adjusted at the module level
- Maximum power produced and tracked from each module individually
- 2%-10% more energy from the PV system

The SolarEdge DC optimized inverter solution mitigates power losses caused by module mismatch for maximum power generation from each module. With SolarEdge, strong modules are not affected by the weaker ones.

### Examples of power mismatch in commercial installations:

#### Manufacturing tolerance mismatch

The module manufacturer-warranted output power range may vary greatly. A standard deviation of 3% is sufficient to result in ~2% energy loss.

#### Soiling, shading & leaves

Module soiling, from dirt, bird droppings or snow, contributes to mismatch between modules and strings.

While there may be no obstructions during site design, throughout a system’s lifetime, a tree may grow or a structure may be erected that creates uneven shading.

![Examples of soiling, shading and leaves]

#### Uneven module aging

Module performance can degrade up to 20% over 20 years, however, each module ages at a different rate, which causes aging mismatch.

Design Flexibility

More power
With module-level power optimization and maximum design flexibility, more modules can be installed on the roof, enabling a shorter project payback period. SolarEdge power optimizers enable installation of:

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

Reduced BoS cost
Up to 15kW per string allows for more modules per string. This leads to fewer strings per inverter and therefore less wiring, combiner boxes, and fuses.
As equipment prices drop and system sizes trend upward, PV projects are increasingly seen as secure long-term investment opportunities. Like any financial asset, PV systems must be monitored and managed to realize their full potential.

Traditional inverters offer limited information, such as string-level or system-level monitoring that can indicate underperformance of the array, but little else. It then becomes costly and time-consuming to send skilled technicians to perform on-site troubleshooting.

The SolarEdge DC-optimized inverter solution offers advanced PV monitoring and asset management. Power optimizers constantly track MPP and report high-resolution data on module performance.

The SolarEdge monitoring platform transforms O&M from a manual, resource-intensive process to an automated, at-a-glance service, ensuring that every plant is performing to the best of its ability at all times.
PV Asset Management with Module-Level Monitoring (cont.)

SolarEdge's monitoring platform features:

1. Real-time remote monitoring at the module, string, and system levels

2. Comprehensive analytics tracking and reports of energy yield, system uptime, performance ratio, and financial performance

3. Pinpointed and automatic alerts for immediate fault detection, accurate maintenance, and rapid response. The alerts show the specific fault location, fault description, and fault status. Energy thresholds alerts can be set to detect underperforming modules. Custom settings available for time of day and offset from sunrise and sunset.

4. The time-of-use feature allows system owners to define peak and off-peak rates in order to track expected PV revenue. This may be used as an indication of the system's ROI.
PV Asset Management with Module-Level Monitoring (cont.)

5. Accurate and remote troubleshooting for fast and efficient resolution with minimal and shortened onsite visits. Examples of identifying underperforming modules:
   
   - Soiling
     
     ![Before cleaning](image1)
     ![After cleaning](image2)

   - Potential induced degradation (PID)
     
     ![Looking at the modules within one string, it is possible to see the power degradation increasing towards the negative pole.](image3)
     ![No need to send technicians to the roof – module voltage is measured remotely.](image4)

   - Bypass diode failure
     
     ![It is easy to identify the bypass diode failure with the module-level voltage graphs. The faulty module outputs at only 2/3 of the voltage (5/6 in this case of power optimizer connected to two modules).](image5)

6. The consumption monitoring feature shows data about electricity consumption, PV production, and self-consumption. This feature is integrated into all SolarEdge inverters and requires only a connection of a SolarEdge energy meter.
Advanced Safety

The SolarEdge solution includes inverter-embedded rapid shutdown functionality without the need for additional roof-mounted devices. The function de-energizes PV source circuits from all sources to less than 30 Volts within 30 seconds.

- With SolarEdge whenever AC power is off, DC string cables are automatically de-energized
- Power optimizers automatically shut down the DC voltage in the string cables to protect installers, maintenance personnel and firefighters
- The SolarEdge inverter solution meets the most advanced safety standards
- NEC 2011 AFCI Compliant | NEC 2014 & 2017 Rapid Shutdown Compliant
- Meets FM Global Property Loss Prevention Datasheet (1-15) engineering requirements
As part of PV asset management planning, it is important to account for future costs that can impact the return on investment of a PV system. The SolarEdge DC optimized inverter solution effectively minimizes these potential costs.

Forward compatibility eliminates expensive stock of spare module inventory.
- Replacement: SolarEdge allows modules of different power classes and brands in the same string.
- Expansion: New power optimizers can be utilized in the same string with older models.

SolarEdge offers 25-year power optimizer warranty, 12-year inverter warranty, and free monitoring for 25 years. SolarEdge offers extended warranties at attractive prices.

SolarEdge provides low-cost inverter replacement out of warranty
- ~40% less than traditional inverters

Products are certified for ammonia resistance - suitable for agricultural areas

All inverter models are UL1741 SA certified, for CPUC Rule 21 grid compliance.
A Higher Lifetime Value

The SolarEdge DC optimized inverter solution offers a better LCOE for a system’s lifetime by maximizing yield and reducing costs.

The SolarEdge DC optimized inverter solution maximizes power generation at the individual module level, which leads to a higher lifetime revenue from PV systems. While the initial cost of the SolarEdge solution is generally slightly higher than the equivalent traditional inverter system, the total installation cost as well as the lifetime maintenance cost is lower. This makes the SolarEdge solution more economically attractive.

Lifetime PV system cost and revenue

1.3MW SolarEdge system, Arizona, USA
Developed by AES Distributed Energy, Inc. (formerly Main Street Power)
Installed by Rosendin Electric
The SolarEdge solution consists of inverters, power optimizers, and a monitoring platform. The technology provides superior power harvesting and module management by connecting power optimizers at the module level. The ability to connect two or four modules to one power optimizer, combined with DC to AC conversion and grid interaction being centralized at a simplified PV inverter maintains a competitive cost structure.

### 2:1 and 4:1 power optimizer configurations
- Module-level MPPT - no mismatch power losses
- Strings of uneven lengths, modules on multiple azimuths & tilts
- Compatible with all three phase SolarEdge inverters
- SafeDC™ - automatic module-level safety shutdown

### 9kVA-100kVA inverters
- Specifically designed to work with power optimizers
- Superior efficiency
- Easy installation, including 2-person install for large capacity models
- Easy, step-by-step inverter activation and commissioning with the SetApp mobile application
- Built-in communication hardware, with optional cellular plug-in
- Integrated DC Safety Switch
- Embedded export limitation
- Optional DC & AC surge protection (depending on inverter model)

### Monitoring platform
- Full visibility of system performance
- Remote troubleshooting
- Access via browser or any Android, iOS smart phone or tablet
- Communication with the power optimizers over existing DC power lines (PLC)

### SolarEdge data logger
Connection of environmental sensors with several wireless communication options, providing monitoring and control

### Performance monitoring
Calculate site performance ratio and measure environmental conditions, using environmental sensors or a satellite-based service.

### Grid interaction
Supports power control, e.g. zero export limitation, local and remote active/reactive power control, inverter AC relay control for secondary grid protection; low voltage and frequency ride through.
200kWp Rooftop System Comparison

Comparison of a 204.6kWp SolarEdge system to a system with a leading traditional string inverter

The system, in Watertown MA, comprises 660 x 310Wp modules. One system was designed with 1 x SE100KUS and 1 x SE66.6KUS SolarEdge inverters, and 330xP700 power optimizers in a 2:1 configuration. The second system was designed with 7x24kW traditional string inverters.

The SE66.6KUS & SE100KUS models are three phase inverters with synergy technology, combining large capacity with reduced installation time and cost.

Energy comparison
Helioscope was used to simulate the first year yield of both systems. 25 years yield was calculated assuming 1% annual degradation and 0.12% annual mismatch growth due to uneven aging.

<table>
<thead>
<tr>
<th>Year 1 yield (MWh)</th>
<th>Traditional String Inverter</th>
<th>SolarEdge System</th>
<th>SolarEdge Advantage</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>269.5</td>
<td>276.2</td>
<td>2.1%</td>
</tr>
<tr>
<td></td>
<td>198.9</td>
<td>209.1</td>
<td>5.1%</td>
</tr>
<tr>
<td></td>
<td>5,848</td>
<td>6,054</td>
<td>3.5%</td>
</tr>
</tbody>
</table>

Electrical diagram comparison

Traditional string inverter system | Total of 33 strings

Standard inverter cabling diagram

BoS comparison

<table>
<thead>
<tr>
<th>Traditional String Inverter</th>
<th>SolarEdge System</th>
</tr>
</thead>
<tbody>
<tr>
<td>DC power (kWp)</td>
<td>204.6</td>
</tr>
<tr>
<td>AC power (kVA)</td>
<td>168.0</td>
</tr>
<tr>
<td>DC/AC sizing</td>
<td>1.22</td>
</tr>
<tr>
<td>Modules</td>
<td>660</td>
</tr>
<tr>
<td>Inverters</td>
<td>7</td>
</tr>
<tr>
<td>No. of strings</td>
<td>33</td>
</tr>
<tr>
<td>Modules per string</td>
<td>20</td>
</tr>
<tr>
<td>DC Cable length (ft)</td>
<td>9,837</td>
</tr>
<tr>
<td>AC Cable length (ft)</td>
<td>370</td>
</tr>
<tr>
<td>Cable Cost (%)</td>
<td>100%</td>
</tr>
<tr>
<td>DC box (pcs)</td>
<td>7</td>
</tr>
<tr>
<td>AC combiner (pcs)</td>
<td>1</td>
</tr>
<tr>
<td>Communication module (pcs)</td>
<td>7</td>
</tr>
<tr>
<td>Data logger (pcs)</td>
<td>1</td>
</tr>
<tr>
<td>BoS cost saving*</td>
<td>2.8c/w</td>
</tr>
</tbody>
</table>

* Estimated saving on labor and materials for DC and AC BoS
200kWp Electrical Diagram Comparison

SolarEdge DC optimized inverter solution

SolarEdge DC optimized inverter solution

Traditional string inverter system

5 strings of 20 modules

5 strings of 20 modules

5 strings of 20 modules

5 strings of 20 modules

4 strings of 20 modules

4 strings of 20 modules
1MWp Ground Mount System Comparison

Comparison of a 1MWp SolarEdge solution to an identical system with a traditional string inverter

The system, in Southbridge MA, comprises of 3,180 x 315Wp modules. One system was designed with 7 x SE100KUS and 1 x SE66.6KUS SolarEdge inverters and 1,610xP700 power optimizers in a 2:1 configuration. The second system was designed with 13 x 60kW traditional string inverters.

The SE66.6KUS & SE100KUS models are three phase inverters with synergy technology, combining large capacity with reduced installation time and cost.

Energy comparison

Helioscope was used to simulate the first year yield of both systems. 25 years yield was calculated assuming 1% annual degradation and 0.12% annual mismatch growth due to uneven aging.

<table>
<thead>
<tr>
<th>Traditional String Inverter</th>
<th>SolarEdge System</th>
<th>SolarEdge Advantage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Year 1 yield (MWh)</td>
<td>1,395</td>
<td>1,419</td>
</tr>
<tr>
<td>Year 25 yield (MWh)</td>
<td>1,030</td>
<td>1,079</td>
</tr>
<tr>
<td>25 years cumulative yield (MWh)</td>
<td>30,267</td>
<td>31,224</td>
</tr>
</tbody>
</table>

BoS comparison

<table>
<thead>
<tr>
<th>Traditional String Inverter</th>
<th>SolarEdge System</th>
</tr>
</thead>
<tbody>
<tr>
<td>DC power (kWp)</td>
<td>1,001.4</td>
</tr>
<tr>
<td>AC power (kVA)</td>
<td>760</td>
</tr>
<tr>
<td>DC/AC sizing</td>
<td>1.28</td>
</tr>
<tr>
<td>Modules</td>
<td>3,170</td>
</tr>
<tr>
<td>Inverters</td>
<td>13</td>
</tr>
<tr>
<td>No. of strings</td>
<td>187</td>
</tr>
<tr>
<td>Modules per string</td>
<td>17 (46/48)</td>
</tr>
<tr>
<td>DC Cable length (ft)</td>
<td>31,042</td>
</tr>
<tr>
<td>AC Cable length (ft)</td>
<td>10,250</td>
</tr>
<tr>
<td>Cable length (%)</td>
<td>100%</td>
</tr>
<tr>
<td>AC combiner box (pcs)</td>
<td>2</td>
</tr>
<tr>
<td>Data logger (pcs)</td>
<td>1</td>
</tr>
<tr>
<td>BoS cost saving*</td>
<td>-</td>
</tr>
</tbody>
</table>

* Estimated saving on labor and materials for DC and AC BoS

Electrical diagram comparison

SolarEdge DC optimized inverter solution | Total of 69 strings

- 9 strings of 46 modules

- Included DC cables
- Additional DC cables

Traditional string inverter system | Total of 187 strings

- 14/15 strings of 17 modules

- Standard inverter cabling diagram
1MWp Electrical Diagram Comparison

SolarEdge DC optimized inverter solution

Traditional string inverter system
Commercial Product Offering

Commercial PV solution

Three phase inverters

9kW-33.3kW

Combines large capacity with ease of installation 43.2kW-100kW

Power optimizers

Module-level optimization P730-P860: 2:1 configuration M1600: 4:1 configuration

Monitoring platform

Free, real-time system visibility at the module level

Communications

Tools for expanding the monitoring and control capabilities of a SolarEdge system, including weather station capabilities for outdoor use

Wireless communication

Multiple options for wireless connection of inverters to the internet e.g. for monitoring

Energy Meter & Current Transformers

For export limitation, production and consumption monitoring

Performance monitoring

Calculate site performance ratio and measure environmental conditions

 Accessories

Enhance system safety
Commercial Offering

Information

Contact your local SolarEdge distributor for more details

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Product Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>SE1000-SEN-IRR-S1</td>
<td>Irradiance Sensor 0-1.4V</td>
</tr>
<tr>
<td>SE1000-SEN-TAMB-S2</td>
<td>Ambient Temperature Sensor 0-10V</td>
</tr>
<tr>
<td>SE1000-SEN-TMOD-S2</td>
<td>Module Temperature Sensor 4-20mA</td>
</tr>
<tr>
<td>SE66.6K-USR48BNU4</td>
<td>3ph Inverter, 66.6kW, 270/480V, with Auto Rapid Shutdown, DC Safety Switch and AFCI</td>
</tr>
<tr>
<td>SE33.3K-USR48BNU4</td>
<td>3ph Inverter, 33.3kW, 270/480V, with Auto Rapid Shutdown, DC Safety Switch and AFCI</td>
</tr>
</tbody>
</table>

Part Number | Product Description |
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>SE43.2K-USRP0BNU4</td>
<td>3ph Inverter Primary Unit, 43.2kW, 280V, with Auto Rapid Shutdown, Connection Unit, DC Safety Switch and AFCI</td>
</tr>
<tr>
<td>SE20K-USR48BNU4</td>
<td>3ph Inverter, 20kW, 270/480V, with Auto Rapid Shutdown, Connection Unit, DC Safety Switch and AFCI</td>
</tr>
</tbody>
</table>

Part Number | Product Description |
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>SE-GNDPLATE-100</td>
<td>SolarEdge Grounding Plate Kit for 100 Power Optimizers</td>
</tr>
<tr>
<td>SE-GNDLUG5-100</td>
<td>SolarEdge Grounding Lug Kit for 100 Power Optimizers</td>
</tr>
</tbody>
</table>

Part Number | Product Description |
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>SE-SAT-PR-S1</td>
<td>Satellite-based Performance Ratio; one site, for one year plus one year historical data</td>
</tr>
</tbody>
</table>

For display products, please refer to https://www.solaredge.com/us/products/gv-monitoring/satellite-based-pr
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 and pre-sale
Our dedicated tools and engineering services help you close deals.

Tailor-made design optimization by SolarEdge pre-sale engineers

Training and tools help your sales team convey the added value of the SolarEdge solution

LCOE and ROI analysis

PV simulation and comparative system analysis

Project design & pre-sale
Project execution
Operation & maintenance
Comprehensive Service Suite (Cont.)

Project execution
Our advanced tools and features will assist you to easily and smoothly execute projects.

- Project design validation prior to installation
- Hands-on installation training by local field engineers
- Installation validation checklist
- DC safety: protecting installers from high DC voltage
- Easy and flexible string layout
- Remote and on-site installation support by local service teams
- Easy inverter activation and commissioning using the mobile SetApp
- Remote operations to commission and activate the installation
- Automatic commissioning report

Operation & maintenance
Our advanced monitoring platform allows you to guarantee system availability and high performance ratio for system lifetime.

- Performance monitoring
  - Fleet management
  - Pre-scheduled performance and status reports of multiple sites
  - Pinpointed automatic alerts
  - Inter-site and multi-site comparisons
  - Satellite-based performance ratio

- Fault detection
  - Inverter and module-level fault identification
  - Remote troubleshooting tools

- Executive reporting
  - Site specific automated production reports

- Service
  - Rapid RMA process
  - Follow the sun call center
18.1GW of systems shipped worldwide

Ground mounts

Farms & agriculture

Industrial rooftops

Public buildings

Carports, floating systems & safety
SolarEdge is a global leader in smart energy technology. By leveraging world-class engineering capabilities and with a relentless focus on innovation, SolarEdge creates smart energy solutions that power our lives and drive future progress.

SolarEdge developed an intelligent inverter solution that changed the way power is harvested and managed in photovoltaic (PV) systems. The SolarEdge DC optimized inverter maximizes power generation while lowering the cost of energy produced by the PV system.

Continuing to advance smart energy, SolarEdge addresses a broad range of energy market segments through its PV, storage, EV charging, UPS, and grid services solutions.

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