

## **About SolarEdge**

#### About us

In 2006, SolarEdge revolutionised 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 140 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 capabilities with tier 1 electronic manufacturing service companies



## **Award-winning** technology





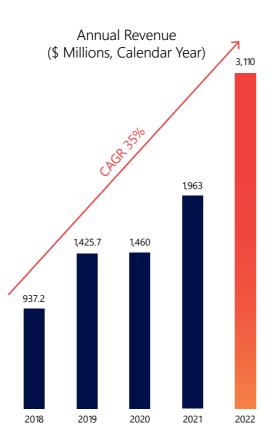








- Over 5.2 million inverters, 47.9 GW, and more than 119.6 million Power Optimisers delivered worldwide
- SolarEdge's Monitoring Platform continuously tracks over 3.5 million installations across the globe



## **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

## **Product reliability**

- 25-year Power Optimiser 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)

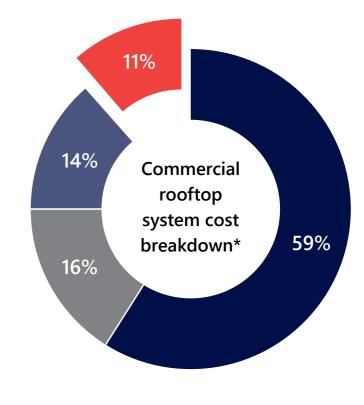


# The Importance of Inverter Selection

#### Inverters account for only 11% of the system cost but:

- Influence up to 27% of system cost (also eBoS)
- Are the "brains" of the system and manage 100% of system production
- Control O&M expenses through PV asset management solutions

Inverter selection is therefore critical for the long-term financial performance of a PV system as it can maximise energy production and reduce lifetime costs.



PV Modules

Structural BoS ■ Electrical BoS

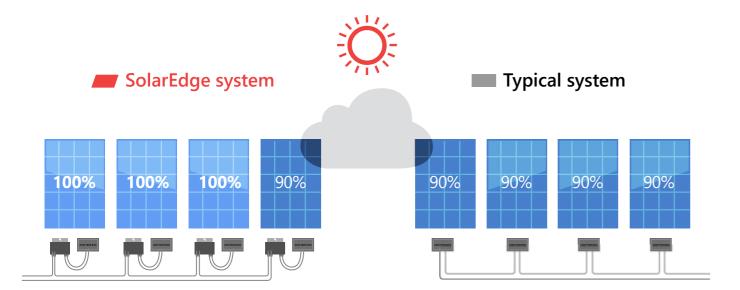
Inverter

Source: Based on US Solar Market Insight by SEIA and Wood Mackenzie, September 2021

## **Increased Revenue**

## More energy from each panel

In a PV system, each panel has an individual maximum power point. Differences between panels are unavoidable in commercial installations. With traditional inverters, the weakest panel reduces the performance of all panels. With SolarEdge, each panel produces at its maximum ability at all times, ensuring greater energy yield from the entire system.



- Generates maximum power from each panel
- Panels are monitored individually. More overall energy is produced by the PV system

- Weak panels reduce the performance of all panels in the string or are bypassed
- Power losses due to panel mismatch

## Power losses can result from multiple factors, including:

#### Manufacturing tolerance mismatch

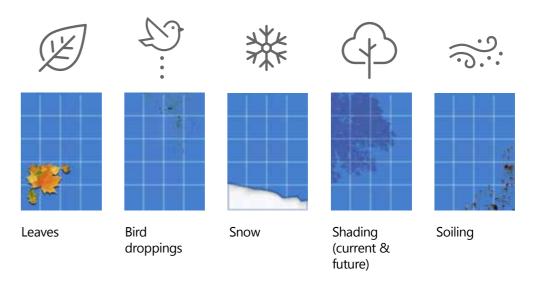
The warranted output power range for PV panels received from a manufacturing plant may vary greatly. A standard deviation of  $\pm 3\%$  is sufficient to result in  $\sim 2\%$  energy loss.



Guaranteed power output from panel manufacturers 0~+3%

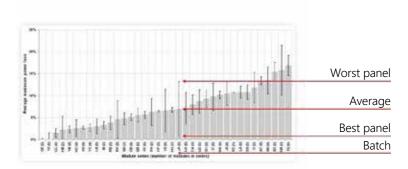
#### Soiling, shading and leaves

Panel soiling, from dirt, bird droppings or snow, contributes to mismatch between panels 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.

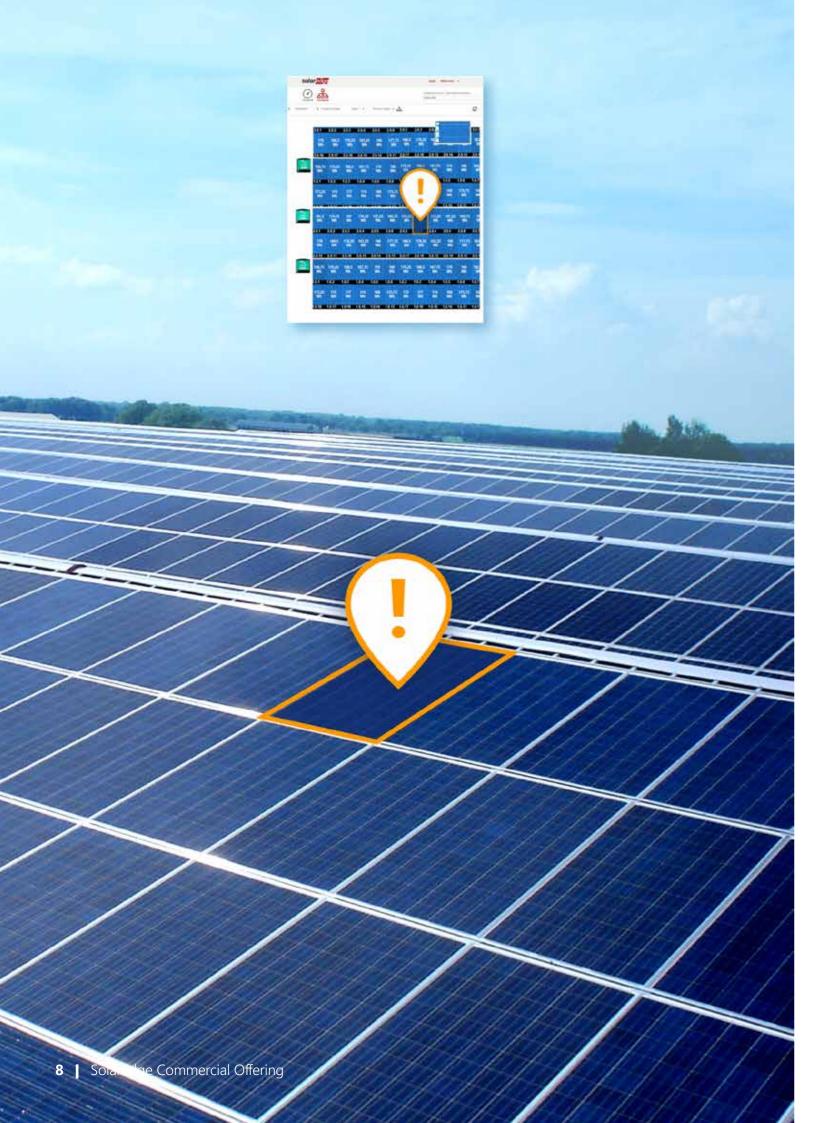


### Uneven panel aging

Panel performance can degrade up to 20% over 20 years, however, each panel ages at a different rate, causing aging mismatch, which increases over time.



Source: A. Skoczek et. al., "The results of performance measurements of field-aged c-Si photovoltaic panels", Prog. Photovolt: Res. Appl. 2009; 17:227–240



# **Advanced Asset Management**

## Full visibility of your system's performance

- Full visibility into your assets through panel-level monitoring free for 25 years
- Automatic alerts on system issues, pinpointed on a virtual site map

### Anytime, anywhere

Complete system status on your mobile device (iOS or Android)

### Future compatibility and warranty

- 25-year Power Optimiser warranty; 12-year inverter warranty; Low cost warranty extension to 20 years
- A variety of panel models can be used for future replacement
- For agricultural areas products are certified for ammonia resistance

## For system lifetime

- Automatic performance reports
- Remote troubleshooting and enhanced maintenance capabilities





# **Advanced Safety**

With millions of photovoltaic (PV) systems installed worldwide, this technology is designed to be relatively safe and reliable. However, as traditional PV installations can reach voltages as high as 1,500VDC, precautions should be taken to ensure the safety of people and assets. With traditional inverters, shutting down the inverter or the grid connection will terminate current flow, but DC voltage in the string cables will stay high for as long as the sun is shining. In addition, electrical arcs, which can result in a fire, create a threat to people and assets in the vicinity of the PV system.

SolarEdge provides a holistic safety solution designed to mitigate electrocution and fire risks.

#### SafeDC™

SafeDC™ is a built-in panel-level safety feature which minimises electrocution risk.

To maintain string voltage below risk levels, Power Optimisers are designed to automatically switch into safety mode, in which the output voltage of each panel will be reduced to 1V in either of these cases:

- During installation, when string is disconnected from the inverter, or the inverter is turned off
- During maintenance or emergency, when the inverter or AC connection is shut down

The SolarEdge SafeDC™ feature is certified in Europe as a DC disconnect according to IEC/EN 60947-1 and IEC/EN 60947-3 and to the safety standards VDE AR 2100-712 and OVE R-11-1.

#### Rapid shutdown capabilities

SolarEdge's optional rapid shutdown feature supports fast DC discharge to safe voltage levels within just 30 seconds, for even greater protection.

### Arc fault detection and interruption

SolarEdge inverters have a built-in protection designed to mitigate the effects of some arcing faults that may pose a risk of fire, in compliance with the UL1699B arc detection standard.

#### SolarEdge Sense Connect

Patented SolarEdge technology that prevents arcs by monitoring S-Series Power Optimisers' connectors, identifying improper connections and possible malfunctions from connector wear and tear.

### Built-in temperature monitoring

Thermal sensors integrated into the system detect faulty wiring that can potentially cause electric arcs.

#### Favored by global solar insurance companies

SolarEdge's multi-layered, holistic safety approach make it a favored PV solution of worldwide solar insurance companies. It also meets leading property insurance company FM Global's DS 1-15 engineering requirements.

Note: Safety functionalities described above may vary between different inverter models and firmware versions, and are applicable when inverter is turned on



# 47.9GW of Systems Shipped Worldwide

## **Ground mounts**



## **Industrial rooftops**



## Farms and agriculture



## **Public buildings**



**Carports, floating systems and safety** 



# **Featured Indian References**



202kW, Puducherry





990kW, Karnataka





2.2MW, Rajasthan





96kW, Tamil Nadu

sunlit future

# **Featured Sri Lankan References**



470kW, Maharagama



207kW, Wattala





500kW, Akurana





100kW, Peliyagoda



# **Ground Mounts**







France, 2.7MW
Ground and roof mounted





Denmark, 2MW
Ground and roof mounted





FL, United States, 1MW



# **Industrial Rooftops**







United Kingdom, 1.63MW

Western International Market, London, The installation won the 2015 Annual European Energy Service Awards for 'Best Energy Project'







NJ, United States, 525kW

amberjack

# **Agricultural Rooftops**



Denmark, 1.22MW



Israel, 700kW



The Netherlands, 303kW





South Africa, 250kW



# **Carports**



**The Netherlands, 3MW** 39 Electric Car Charging Stations





Germany, 1MW Carport of TSG Hoffenheim Stadium, Sinsheim



OH, United States, 335kW Honda Motorcars, Ohio



United Kingdom, 150kW John Lewis car park, Exeter



# **Schools**



Singapore, 1MW American School





United Kingdom, 250kW

United Kingdom, 250kW





CI

The Netherlands, 303kW

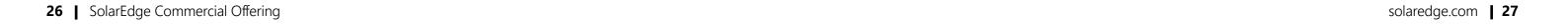
De Meerwaarde, Barneveld



United States, 756kW

Farmington Central School District #265, Illinois







## **Fire Stations**



## United Kingdom, 700kW on 15 sites



Hampshire Fire and Rescue Service

"Fire precautions and revenue reduction are important factors for all Hampshire County Council projects. We have standardised our Solar PV solution for the whole estate in order to isolate the PV energy in fire alarm events"

> Paul Roebuck MIET, Engineering Manager, Hampshire County Council



#### United States, 42kW

Putnam Lake Fire Department, New York

"I am truly proud of this installation, Putnam Lake Fire Department & New York State Solar Farm Inc. have set the standard of what is possible in a community that wants to take control of its energy future using quality products and a great local installer. The best part is that this fire station will be a training facility for other first responders about PV safety."

> Anthony Sicari Jr., CEO of New York State Solar Farm Inc.

## **Gas Stations**



#### South Africa, 20kW



Port Elizabeth

"Without SolarEdge's SafeDC™ technology, the installation would not have been approved and we would have missed out on this important business opportunity."

> Barry Davis, Director, Kwikelec



## Israel, multiple 50kW



Petrol stations

"We have been working with the SolarEdge solution for commercial systems for a long time, and when we were asked as advisors for Dor Alon petrol stations to recommend a PV solution, SolarEdge was the obvious choice, not only for the added yields it provides, but also because of the comprehensive safety solution it offers, which is particularly important in this kind of installation."

> Eyal Baharav, Owner, Golan Solar

# **Health Care**







South Africa, 100kW 3 NHC health care centers





United States, 220kW Kuakini hospital, Hawaii





United Kingdom, 32kW



Birds Hill nursing home

30 | SolarEdge Commercial Offering

# Floatovoltaic Systems







#### The Netherlands, 780kW

De Krim Holiday Resort, Texel Island



"De Krim Resort invested in a solar PV system to be environmentally friendly and generate our own electricity. Thanks to asset reuse, high performance, and a positive impact on water quality, the floating installation is expected to far exceed the estimated return on our investment."

> Iwan Groothuis, Managing Director, De Krim Resort



The Netherlands, 232kW





"The use of floating solar PV at water treatment facilities that have available water bodies and need to use electricity for water treatment operations is gaining traction. The floating solar park at the Everstekoog water treatment site powers all public street lamps (LED) on Texel Island."

> Nicol Schermer, Manager, Texel4trading



United States, 386kW



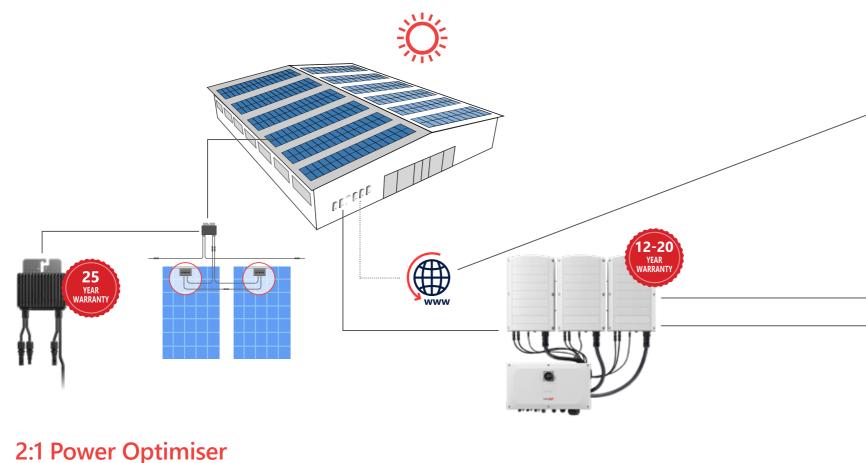
BLUE ORK ENERGY"

Far Niente Winery, California

The 386kW installation, partially ground-mounted and partially floating on pontoons atop the winery's irrigation pond, has become a net-zero energy establishment. The floating system enables the winery to preserve nearly an acre of vineyard land, and helps to reduce the amount of water lost to evaporation by shading the previously uncovered pond.

# **Commercial System Diagram**

The SolarEdge solution consists of inverters, Power Optimisers, and a Monitoring Platform. The technology provides superior power harvesting and panel management by connecting Power Optimisers at the panel level. The ability to connect two panels to just one Power Optimiser, combined with DC to AC conversion and grid interaction being centralised at a simplified PV inverter, maintains a competitive cost structure.



## **Monitoring Platform**

- Full visibility of system performance
- Access via browser or any Android, iOS smart phone or tablet
- Automatic performance and alert reports

## **Commercial gateway**

Connection of multiple environmental sensors to analyse system performance

## **Performance monitoring**

Calculate site performance ratio and measure environmental conditions, using environmental

## sensors.

### **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

### 15kVA - 120kVA inverters

- Panel-level MPPT no mismatch power losses
- Strings of uneven lengths, panels on multiple azimuths and tilts

configurations

- Compatible with SolarEdge inverters SE15K and
- SafeDC<sup>™</sup> automatic panel-level safety
- SolarEdge Sense Connect avoids thermal issues via early detection of improper connections or malfunctions (S-Series models only)

- Specifically designed to work with Power Optimisers
- High efficiency
- Simple and reliable
- Easy to install
- Advanced safety features

