

solar **edge**
Home

Segen Showcase

July 2023



solar **edge**
Home

Where is the world headed?



Transformation



Decarbonization



Decentralization



Electrification

The Energy Market is Transforming



Home electricity usage
is increasing



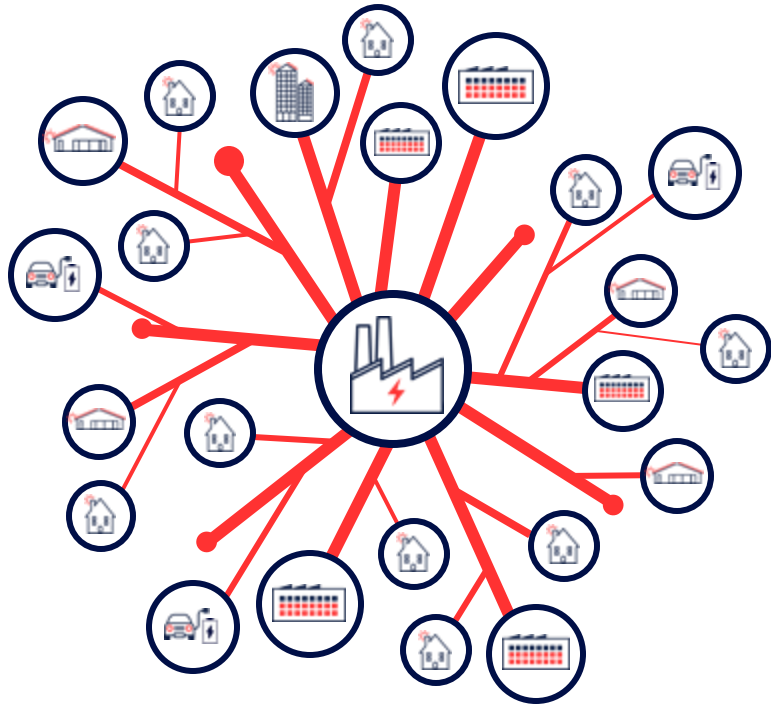
Energy financial
structures are changing



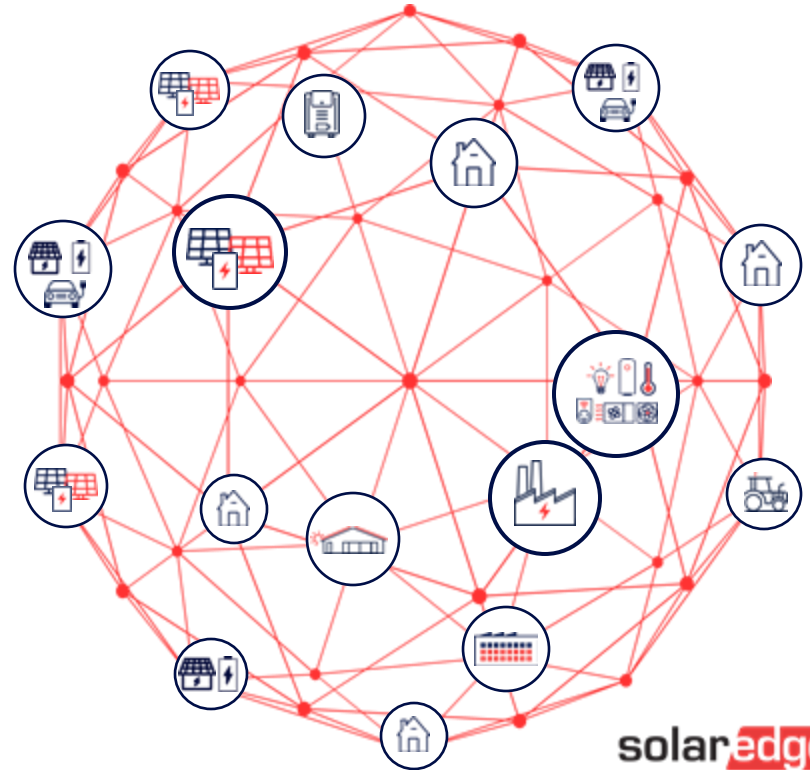
Grid stability has become
even more uncertain

Digital Transformation And Energy Transformation

Centralized production



Decentralized energy production



Why SolarEdge? Why is it important for the future?



HOME SERVICES NEWS EDUCATION AB

SolarEdge Launches its First Battery Virtual Power Plant Great Britain's National Grid ESO Demand Forecast

- Great Britain's SolarEdge Home Battery owners can participate in the Demand Forecast

yahoo!finance

Search for news, symbols or companies

S&P 500

1,401.53

-45.29 (-1.02%)

Dow 30

33,840.69

-447.95 (-1.31%)

Nasdaq

13,642.18

-149.47 (-1.08%)

SolarEdge launches its first Battery Virtual Power Plant

BY ASHWINI SAKHARKAR

FEBRUARY 13, 2023 14:29 IST

TECHNOLOGY

Follow us on [Google News](#)



SolarEdge (SEDG) Launches Its First Battery Virtual Power Plant

1st Virtual Power Plant From SolarEdge Supporting UK Grid



solar**edge**

SolarEdge Virtual Power Plant Platform



Cloud-Based Platform



Aggregation and Grouping



Management and Control



Forecasting and Optimization



Reporting and Monitoring

PV is only a
Part of the
Solution



solar edge

The SolarEdge Integrated Solution

Simple, Flexible & Future Proof

- Seamless operation of all system components
- Flexibility to 'mix & match' from multiple products
- Seamless communication between all devices (G100 issue 2)

SolarEdge Home Backup Interface



SolarEdge Home battery



SolarEdge Home Hub inverter



mySolarEdge



Smart EV Charger



Smart Modules



Embedded Safety Features

SolarEdge Energy Meter



Smart Energy Devices



Hot Water



Sensor



Relays

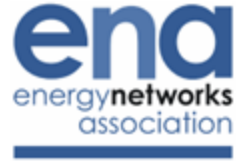


Socket

What is G100 Issue 2 Amendment 2

- Customers Import, and Export Limitation Scheme. 1st May 2023
- Measures both the import, and the export
- Import limit is either 60, 80, 100 amps
- Measures the current, rather than the wattage
- Will shut down the production if export is too high
- Will shut down EV, Battery, and Smart Energy devices if the import is too high
- Has four states, two lockout modes

PRODUCED BY THE OPERATIONS DIRECTORATE OF ENERGY NETWORKS ASSOCIATION



Engineering Recommendation G100

Issue 2 2022 Amendment 2

Technical Requirements for Customers' Export
and Import Limitation Schemes

ENA Type Test Register

- The SolarEdge type test certificate comprises of four documents, and can be found on the ENA database
 - Inverter type test certificate
 - G100 issue 2 amendment 2 documentation
 - Cyber security documentation

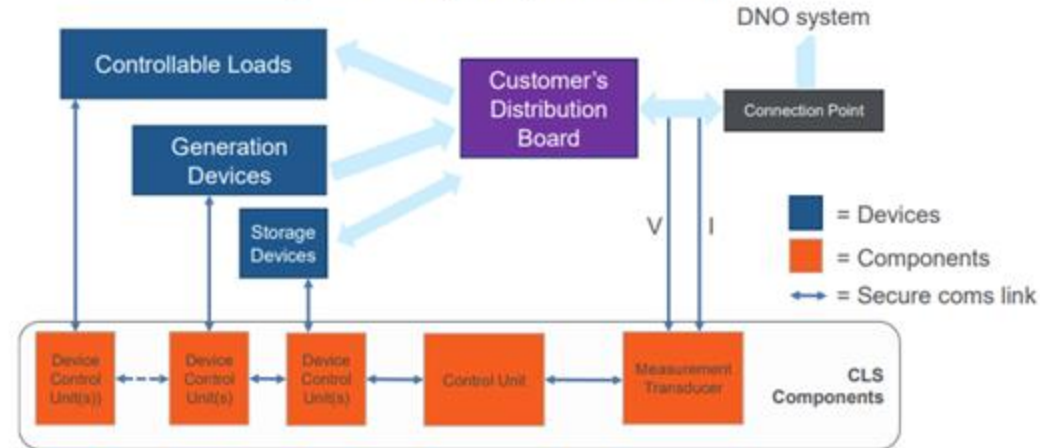
SOETC/02113/V2		SE5K-RWS (G100 Issue 2 Amendment 2) - SolarEdge Technologies	
Device Reference	SOETC/02113/V2		
Compliance Status	Further information required		
Manufacturer	SolarEdge Technologies		
Model Name/Number	SE5K-RWS (G100 Issue 2 Amendment 2)		
Date Published	19 Apr 2023		
Category	Inverter		
Type	PV		
Registered Capacity	5 kW		
No. of Phases	Three phase		
Software Version	N/A		
Hardware Version	N/A		
Manufacturer's Device Notes	Added G100 Issue 2 Amendment 2 Documentation.		
Manufacturer's Compliance Notes	Added G100 Issue 2 Amendment 2 Documentation.		
Supporting Documents/Files	SE5K-RWS (PDF Document - 748 kB)		
	G100 Issue 2 Amendment 2 Documentation (Word Document - 549 kB)		
	G100 Cyber Security Declaration (PDF Document - 133 kB)		
View G98/G99/G100 Type Test Status (GB & NI) ↓			

What is G100 Issue 2 Amendment 2

- Export limit can be set to any value.
- Import limit is either 60, 80, 100 amps
- State 1 – Normal operation
 - Devices controlled to keep in the limits set
- State 2 – Occasional Excursion
 - can exceed for up to 15 seconds
- State 3 – Failed state
 - Devices import/export less.
 - Devices switch off
- State 4 – Operation without CLS.
 - Devices switch off

Conceptually the CLS can be represented Figure 4-1.

Figure 4-1 Conceptual Representation of a CLS



SOLAREEDGE HOME HUB INVERTERS



SolarEdge
Home Hub
Inverter -
Single Phase

SolarEdge
Home Hub
Inverter -
Three Phase

The ultimate home energy managers in charge of PV production, battery storage, backup applications*, EV charging, and our smart energy devices

- High DC-AC oversize ratio - up to 200% (up to 150% 3ph)
- Backup-ready inverter
 - *Backup operation requires Backup Interface & Battery
- Serves as the home energy manager
- Seamless connection with SolarEdge Home Network (included)
- VPP ready
- Available sizes:
 - Single Phase inverter range: 2.5 – 10kW
 - Three Phase inverter range: 5kW, 8kW, 10kW

* Backup applications are subject to local regulations and require connection with the SolarEdge Home Backup Interface.

SOLAREGE HOME BACKUP INTERFACE



Provides the end customer with backup power* for either full or partial home loads in the event of grid interruption.

- Controls the disconnection of house loads and PV generator from the grid in backup mode
- Robust and flexible options
- Full home, partial and multi day backup
- Integrated Export/Import Meter
- Rated up to 100amp (single phase)
- Rated up to 3x63A (three phase)
- Built in SolarEdge home Network

* Backup applications are subject to local regulations and require connection with SolarEdge Home Hub Inverter.

SOLAREGE HOME BATTERY 400V



Highly efficient DC-coupled battery.

- Highly efficient energy storage with up to 94.5% round trip efficiency
- 10kWh battery
- Multiple batteries stacking per inverter for increased system capacity – up to 3 per inverter
- Easier, Flexible installation – indoor or outdoor
 - Swift plug-and-play installation and commissioning via SetApp
- More safety by design:
 - Continuous protection through measurement and monitoring of battery current and voltage levels
 - A built-in array of multi-point temperature sensors to mitigate the risk of battery overheating
- Easy O&M via the SolarEdge Monitoring Platform

* Backup applications are subject to local regulations and require connection with SolarEdge Home Hub Inverter – Single Phase and the SolarEdge Home Backup Interface.

SOLAREEDGE HOME SMART ENERGY DEVICES



Our Smart Energy Devices optimize the use of solar energy to power compatible home appliances, enabling homeowners to lower their electricity bills

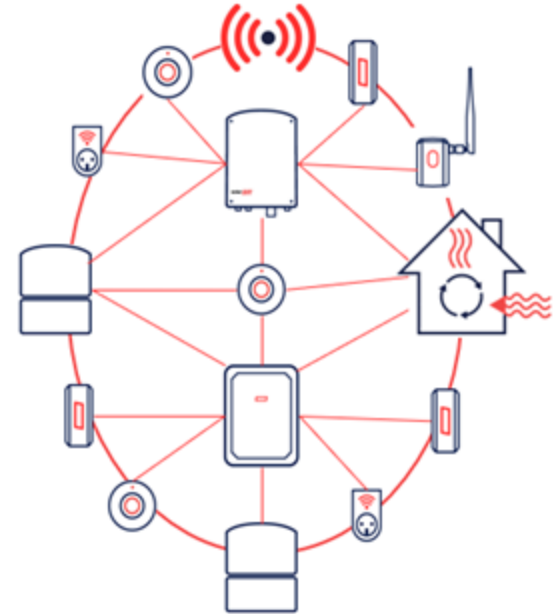
- **SolarEdge Home Hot Water Controller***
Automatically diverts excess PV energy to power the home's hot water system
- **SolarEdge Home Load Controller***
Optimizes energy consumption by controlling appliance usage
- **SolarEdge Home Smart Switch*:**
Perfectly located inside the electrical cabinet to control small to medium home appliances
- **SolarEdge Home Smart Socket*:**
Can be flexibly plugged into an outlet to control compatible home appliances

* Expected availability H2 2023.

SolarEdge Home Network

Seamless Communication with SolarEdge Home Network

- Wireless communication between the inverter, battery and all other SolarEdge smart devices with wireless sub-GHz mesh network infrastructure
- Reducing wiring and connections
 - No messy cables, conduits, or drilling
 - Reduces installation time & risk of errors
- Automatic device detection – devices pop up on application when powered
 - Rapid discovery process
- Overcomes distance or physical limitations for seamless connection between devices in the home



MySolarEdge App

Seeing Is Saving with mySolarEdge

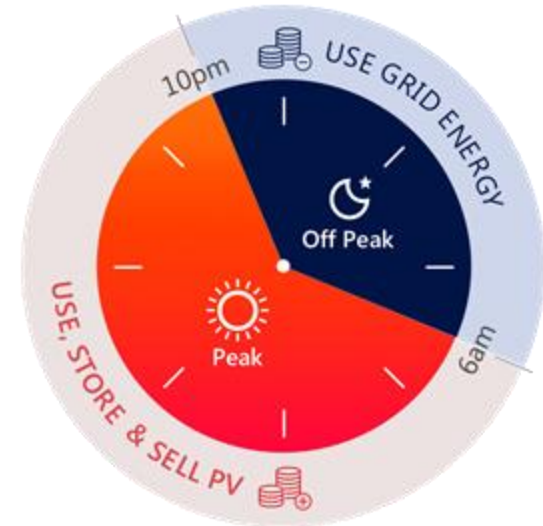
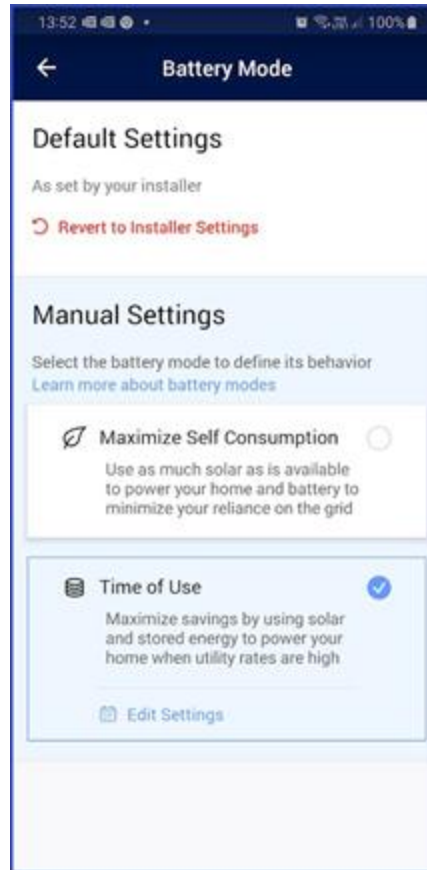
- Real-time insight into energy production
 - Understand how to keep bills low
 - Know when its time to upgrade/expand (EV Charger, Hot Water, batteries)
 - Monitors system performance, anytime, anywhere
 - Controls smart energy home devices on-the-go
 - Provides quick access to SolarEdge support



Battery Mode

Battery Profile Programming For TOU Markets

- Charge the battery when electricity prices are low
- Discharge to supply the house when prices are high
- During each time slot the system operates according to one of seven modes
 - Charge the battery from solar or the grid or discharge it according to your needs



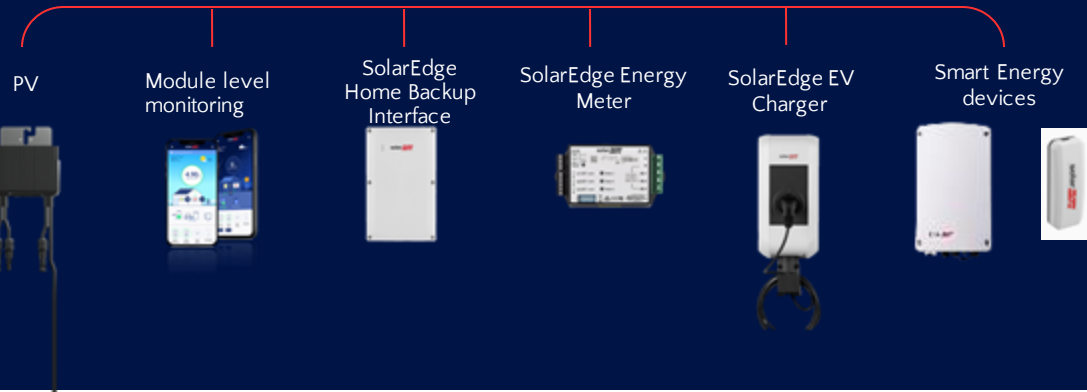
The One. For All and G100/2/2 Solution

The Ultimate Power Couple

SolarEdge Home
Hub inverter



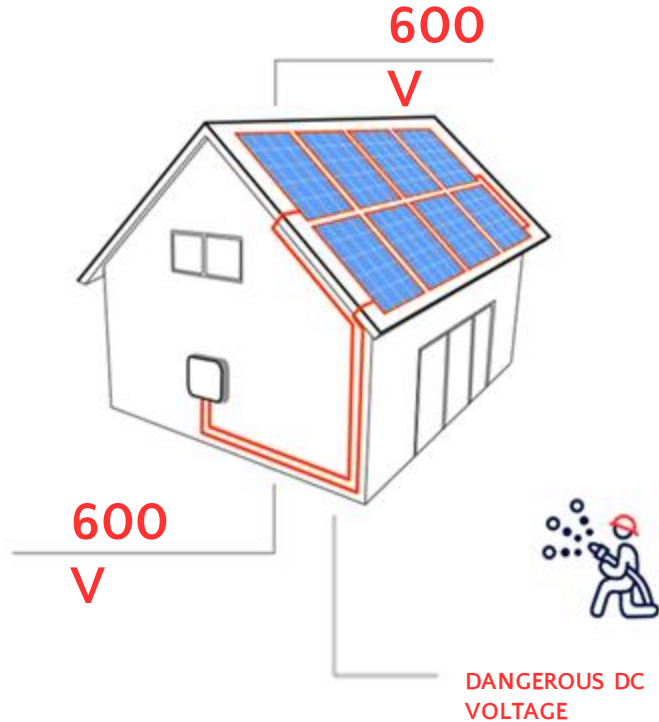
SolarEdge Home
Battery



ENA Type Test Register – G100 issue 2 Amendment 2

Type Test Register	Home	Guest	Resources	Contact Us	ena energy networks association			
SOETC/03557/Y1/A1	Compliant	26 May 2023	SolarEdge Technologies	SE5K-RWB (G100 Issue 2 Amendment 2)	Inverter	PV	5 kW	Three
SOETC/03556/Y1/A1	Compliant	26 May 2023	SolarEdge Technologies	SE4K-RWB (G100 Issue 2 Amendment 2)	Inverter	PV	4 kW	Three
SOETC/03505/Y1/A1	Compliant	26 May 2023	SolarEdge Technologies	SE3K-RWB (G100 Issue 2 Amendment 2)	Inverter	PV	3 kW	Three
SOETC/00166/Y2/A2	Compliant	26 May 2023	SolarEdge Technologies	SE10000H (G100 Issue 2 Amendment 2)	Inverter	PV	10 kW	One
SOETC/00165/Y2/A2	Compliant	26 May 2023	SolarEdge Technologies	SE8000H (G100 Issue 2 Amendment 2)	Inverter	PV	8 kW	One
SOETC/00164/Y2/A2	Compliant	26 May 2023	SolarEdge Technologies	SE6000H (G100 Issue 2 Amendment 2)	Inverter	PV	6 kW	One
SOETC/00163/Y2/A2	Compliant	26 May 2023	SolarEdge Technologies	SE5000H (G100 Issue 2 Amendment 2)	Inverter	PV	5 kW	One
SOETC/00161/Y2/A3	Compliant	26 May 2023	SolarEdge Technologies	SE4000H (G100 Issue 2 Amendment 2)	Inverter	PV	4 kW	One
SOETC/02350/Y1/A2	Compliant	26 May 2023	SolarEdge Technologies	SE3680H (G100 Issue 2 Amendment 2)	Inverter	PV	3.68 kW	One
SOETC/02349/Y1/A2	Compliant	26 May 2023	SolarEdge Technologies	SE3500H (G100 Issue 2 Amendment 2)	Inverter	PV	3.5 kW	One
SOETC/02348/Y1/A1	Compliant	26 May 2023	SolarEdge Technologies	SE3000H (G100 Issue 2 Amendment 2)	Inverter	PV	3 kW	One

YOU CAN'T TURN OFF THE SUN



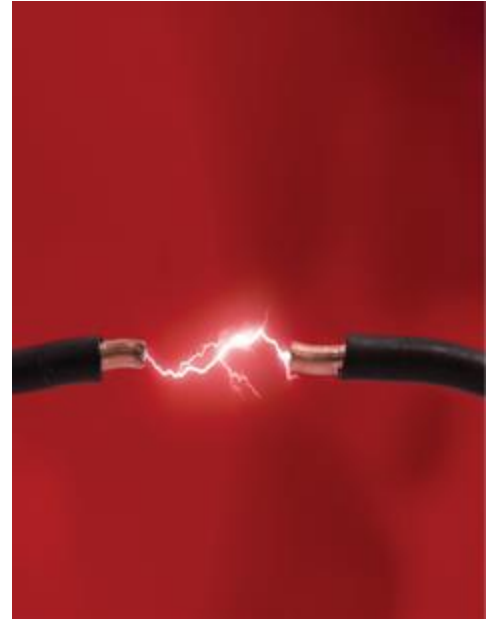
PV systems continue to generate high DC voltage when disconnected from the AC grid during daylight

- When connected in a string, residential and commercial solar array voltage can reach 600V
- This is potentially dangerous to installers during installation and maintenance personnel during O&M
- Firefighters commonly cut off building power, so they have a safe environment in which to operate
- High DC voltage restricts safe emergency response work



Arc Fault Detection and Interruption

- SolarEdge inverters have 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
- The US standard, which came into effect as part of NEC2011, includes requirements for serial arc detection (i.e. arcs within the string) and for manual on-site restart after an arc detection event
- With no comparable arc detection standard in the EU, non-US SolarEdge inverters can detect and interrupt arcs as defined by the UL1699B
 - In addition to the manual restart, a mechanism for auto-reconnect can be enabled during system commissioning



WHAT ARE ELECTRIC ARCS?

- Continuous high-energy discharge, resulting from a current flowing through a non-conducting medium such as air

When does this occur?

- Faulty/ improperly connected cables, corrosion, animals gnawing on cables, defective DC isolator:
- Overheating of system components
- Age of components (degradation over time increases risk)

In an electrified environment, arcs can lead to shock hazards or fire



ARC PREVENTION: SOLAREEDGE SENSE

CONNECT

- Before an arc can occur, there is a change in temperature
- S-Series Power Optimizers are equipped with Sense Connect to detect this change in temperature BEFORE it turns into an arc
- The system will immediately shut down, extending equipment life, and protecting people and property
- The inverter is equipped with a similar mechanism, sensing temperature irregularities on the AC and DC connectors



ADVANCED SAFETY WITH SOLAREGE SAFEDC™

Designed to enable a safe environment for installers during installation and maintenance or for emergency teams during fire

Power Optimizers are designed to AUTOMATICALLY drop to 1V DC in each of the following cases:

- An emergency incident like arc or fire
- A building is disconnected from the electricity grid
- The inverter has been switched off
- Insulation faults, e.g. flooding or building collapse

When AC power is off, DC cables are at a safe DC voltage (<30Vdc resi / <80Vdc commercial)



SolarEdge in Numbers

114.1M

Power Optimizers
shipped



#1



Solar
inverter
company*

476 awarded
patents and **479**
additional patent
applications

36

Countries
presence

>3.3M

Monitored systems
around the world

\$943.7M

Q1 2023 revenue

5,285

employees



4.9M

Inverters
shipped



43.6GW

of our systems
shipped worldwide

solaredge

*based on revenue and excluding China, according to IHS First Quarter 2023

Thank You!



SolarEdge



SolarEdge



@SolarEdgePV

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.

Version # V.10

solaredge