## solaredge

## Maximizing Solar Cyber Protections

Growing threats to the global energy sector In today's interconnected world, the energy sector is not immune from cyber threats stemming from multiple sources. Such threats range from financiallydriven schemes executed by cyber criminals to politically motivated attacks orchestrated by nation-states.

In 2024 alone, cyber-hacking victims worldwide (from all sectors) paid out a massive \$814 million following ransomware attacks - and that's just what was reported.\*

Unsecured PV systems pose business risks Solar power is a fast-growing component of the global energy mix, constituting a significant part of the total energy production for numerous countries such as the Netherlands, Germany, and the US. It's already a critical power source that helps lower electricity costs and ensure business continuity for many companies. While offering sustainable energy solutions, unsecured PV systems also introduce new avenues for cyber threats. At the heart of each system is the inverter, an Internet of Things (IoT) device that is usually connected to the Internet to enable system monitoring and control.

Solar is used to power an increasing number of on-site energy loads such as batteries, EV chargers, and HVAC systems, and this will be increasingly the case as we transition to the age of energy management systems. An unsecured PV system not only threatens business continuity but can also serve as an unwitting gateway for hackers to access energy loads as well as an organization's wider digital platforms, causing further material, financial, and reputational damage.

# Risks faced by low-cost PV vendors with limited or no cyber protection:

#### Data leak and penalties

Hackers can take advantage of vulnerable PV systems to steal private data residing on an organization's internal networks resulting in a data breach that forces the victim to pay hefty fines.

#### Remote control and Denial-of-Service (DoS)

When a business falls victim to DoS attacks or remote-control breaches, it faces significant disruptions. Ransomware can hold critical data hostage, while remote control and DoS attacks and breaches may bring essential services to a complete standstill.

#### **Compliance exposure**

As new cyber regulations are introduced, PV site owners must take proactive measures to ensure their systems remain compliant and avoid the risk of product recalls or financial penalties if their networks are compromised.

## New cyber laws and regulations for PV systems are in the works

PV systems have become critical energy infrastructure and as such attract attention from regulators. This is already seen in a "wave" of upcoming new laws and regulations.



#### **NIST IR 8498**

Cybersecurity Guidelines for Smart Inverters

#### UL 2941

A dedicated international standard for the cybersecurity of Smart Inverters and Distributed Energy Resources. (Expected 2025)

**The "U.S Cyber Trust Mark"** A cybersecurity certification and labeling program. (Expected 2025)

National Association of Regulatory Utility Commissions (NARUC/NASEO) Cybersecurity Baselines for Electric Distribution Systems and DER. (Expected 2025) UK PSTI (2023)

The Product Security and Telecommunications Infrastructure.



#### RED 2014/53/EU

The European radio equipment directive.

#### Cyber Resilience Act

EU wide legislation for the cybersecurity of IoT and connected devices. (Expected 2026-2027)

#### **NIS 2 Directive**

EU wide directive for achieving a high level of cybersecurity across the EU. (Effective October 2024)

#### NCCS - Network Code on Cybersecurity

A European standard for the cybersecurity of cross-border electricity flows

### SolarEdge - A global leader in PV cybersecurity

As a PV industry leader with a global footprint of millions of IoT devices, SolarEdge is in a prime position to recognize the importance of mitigating potential cybersecurity risks PV asset owners face as well as the possible threats to energy grids.

We have an extensive track record in PV safety, helping to establish critical PV safety standards in the US and beyond. And we aim to do the same for PV cybersecurity.



# We've placed your security at the core of our business

SolarEdge's cyber efforts are backed by substantial investments and extensive in-house cybersecurity expertise



#### We help devise international regulatory cyber standards

SolarEdge actively participates in various technical committees and works to ensure that our product design is aligned with upcoming regulations. Our devices meet the standards of the latest reference guides and DER cybersecurity standards.



#### SolarEdge products are developed with cybersecurity a core priority

We strive to keep our customers constantly protected from the ever-evolving cyber threats by implementing measures at every step of our product design, across all SolarEdge software and hardware.

### Maximize your CyberEDGE

Partnering with SolarEdge means you get better protection, throughout the entire system lifetime. Our tiered approach to cybersecurity is aimed at protecting data integrity, communications, and business operations from site commissioning through to production.

To safeguard system connectivity, functionality, and customer data, SolarEdge follows the Cyber Informed Engineering (CIE) principle, embedding information security mechanisms into our products from the initial design stages. We continuously adapt and enhance our solutions to align with evolving demands and regulatory standards.

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	Data security	
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		Visibility & control  Visibility & control  Network security  Data security  Device security

### Just like PV safety, PV cybersecurity is non-negotiable

Minimize your cyber risk by choosing to partner with SolarEdge. Ensure your business remains secure and resilient against ever-evolving threats.

#### About SolarEdge

SolarEdge Technologies is a global leader in renewable energy technology that applies world-class engineering and innovation to provide solar PV solutions for the residential, commercial and utility segments. SolarEdge brings an optimized approach to generating, storing, managing and consuming energy. The company develops and produces PV inverters and Power Optimizers, energy management and optimization solutions, energy storage and grid services. SolarEdge's DC-optimized technology is installed in millions of homes in over 145 countries, and more than 50% of Fortune 100 companies have SolarEdge technology on their rooftops. SolarEdge is accelerating the transition towards distributed, sustainable energy networks which will optimize energy everywhere.

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