

# A Simpler Approach for Greater Performance

IT IS A COMMON MISCONCEPTION that power optimizers provide the same benefits as microinverters. In fact, all power optimizer solutions have two stages of power conversion and require proprietary networking to coordinate these two stages. This increases system complexity and decreases overall efficiency and reliability. In contrast, microinverters are single-stage power converters, which is the most efficient and reliable architecture possible.

**“The number of optimizers in a string is another factor affecting efficiency.”**

—SolarEdge Documentation

### EFFICIENCY

Power optimizers introduce new sources of inefficiency, but there are no industry standards for evaluating total performance impact.

**“Power optimizers must be able to communicate with the inverter in order to produce power.”**

—SolarEdge website

### AVAILABILITY

All optimizer technologies depend on communications signals to operate. This introduces a new point of system failure in addition to the central inverter.

## OVERALL SYSTEM EFFICIENCY & AVAILABILITY

### Power Optimizers

Efficiency | Uptime

Power Optimizers **98.0%** | **99.5%**

Communications **99.5%** | **98.0%**

String Inverter **96.0%** | **97.0%**

AC Wiring **99.0%** | **100.0%**

Total **92.7%** | **94.6%**

Overall

**87.7%**



### Enphase Microinverters

Efficiency | Uptime

**96.0%** | **99.8%** Enphase Microinverters

**99.0%** | **100.0%** AC Wiring

**95.0%** | **99.8%** Total

Overall

**94.8%**