Increased Energy with Module-Level MPPT

Fitted with a thermal insulation system, an underfloor heating system powered by a condensing boiler, and solar-thermal collectors for heating and hot water, the house was already considered a high-efficiency home. As part of the efforts to implement additional energy efficiency, the home owner decided to install a PV system. With elevated energy needs and limited roof area, it was crucial to leverage all-available space while maximizing energy from every module. This meant that modules would need to be installed at multiple orientations and would have varying MPPs. Module-level MPP tracking performed by SolarEdge power optimizers allows generation of maximum energy from every module. Even though the modules installed on different roof facets have varying MPPs, they still generate the maximum energy possible while connected in a single string.
Maximum Design Flexibility
When working with SolarEdge Inverters, SolarEdge power optimizers offer module-level optimization and fixed input voltage. This allows efficient use of all available space through unprecedented design flexibility - multiple orientations, tilts, and even module types and sizes in the same string. This 10kW system has an East-West orientation with two opposite-facing roof facets, but thanks to module-level optimization it only needs one three-phase inverter for a 42-module string. Reducing strings decreases BoS costs. In addition, the SolarEdge solution allowed 5 additional modules (1.5Wp) to be placed on the roof in zones that typically don’t support solar installation.

Enhanced Maintenance and Yield Assurance
SolarEdge power optimizers also enable performance monitoring at the module level and accurate troubleshooting pinpointed on a virtual site map, for enhanced maintenance, improved transparency into system performance, and increased system uptime. Defining himself as a tech fan, the home owner identified the single-module monitoring system as a particularly important benefit by stating, “For me, only the best!”