

# Optimizing Commercial PV Systems for an Improved Workout



Lorna Jane's 100 kW system optimized by SolarEdge power optimizers and SolarEdge inverters for increased energy, maximum design flexibility, and enhanced maintenance.

**“SolarEdge power optimizers and inverters help PV system owners achieve higher self-consumption.”**

> Len Law, Evolution Solar

Power optimizers are making a big impact in the Australian PV market in both residential and commercial PV systems alike. In fact, after Lorna Jane's chief executive officer, Bill Clarkson, installed a 10 kW system with SolarEdge power optimizers and SolarEdge inverters at his personal home, he was so pleased with the results that he has now installed a new 100 kW system optimized by SolarEdge at his company's headquarters.

For those of you who are unaware, Lorna Jane is Australia's award-winning designer, manufacturer, and retailer of active wear for women. In business for more than two decades, Lorna Jane continues to deliver active, authentic, innovative, and inspirational garments to its customers. The company, known for its forward-thinking, is ahead of the trend when it comes to PV and power optimization.

Len Law, Director of Evolution Solar, which installed the system for Lorna Jane, explains why SolarEdge was the best technology for the Lorna Jane installation, “By allowing more panels to be installed on the roof and improving insight into system performance, SolarEdge power optimizers and inverters help PV system owners achieve higher self-consumption.” After being introduced to SolarEdge technology during the company's roadshow in 2012 in Australia, Law and his company have experienced great business success installing SolarEdge technology.

## Maximum Design Flexibility while Reducing BOS Cost

SolarEdge power optimizers maintain a fixed-string voltage at the SolarEdge inverter’s input. This allows unprecedented design flexibility and significantly longer strings. In the Lorna Jane PV system, SolarEdge allowed strings to be lengthened to 36 modules per string in the Lorna Jane PV system. As such, the amount of strings were reduced by half compared to a traditional PV system thus resulting in decreased labor time and a significant reduction in DC BoS costs.

Additionally, SolarEdge technology allows strings of uneven lengths and strings to be comprised of modules installed on varying roof tilts, orientations, and facets. This flexibility in design allowed modules in the same string to be installed on different roof tilts in the Lorna Jane PV system.

“The flexibility of design offers both the system owner and the installer significant benefits. The system owner is able to use more of its roof for energy production. While we, as an installer, are able to sell larger systems, especially as it works well with the zero-to-grid device that we sell and install,” stated Law.

## Increased Energy

SolarEdge module-level power optimizers perform per module maximum power point tracking (MPPT) and therefore allow each module to generate its own maximum possible energy. This eliminates power losses due to module mismatch from which traditional system’s suffer.

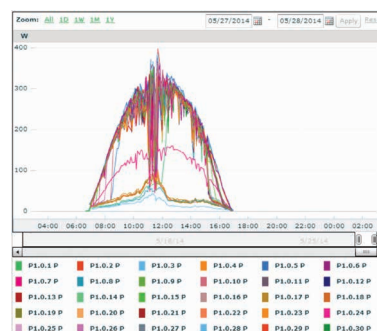
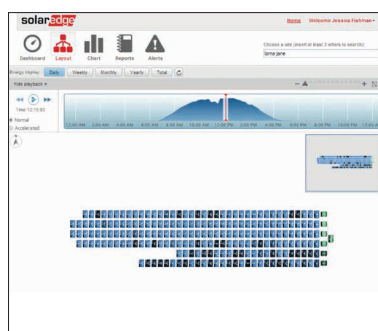
## Enhanced Maintenance

SolarEdge power optimizers enable performance monitoring at the module level. Alerts and underperforming modules are pinpointed on a virtual site map offer Lorna Jane fast and accurate maintenance and increased system uptime. Having a positive experience with the SolarEdge monitoring portal for his home PV system, Bill Clarkson felt it was particularly important to have the same depth of insight into the company’s system. With free lifetime monitoring from a mobile or computer, the Lorna Jane site’s performance will monitored for 25 years.

“While the monitoring portal allows the system owner to see system production, it pinpoints underperforming modules for installers so that we do not need to spend time locating the problem and allows us to perform remote troubleshooting. This is an invaluable tool for installers,” Law pointed out.

The 100 kW rooftop system will drastically reduce the building’s electricity bills by generating a large percentage of the business’ electricity operating requirements. The system includes 200 SolarEdge power optimizers, six 17 kW three-phase SolarEdge inverters, 400 Daqo 250W panels, Sunlock railing, and a zero to grid device.

A screenshot of the Lorna Jane’s monitoring. The layout view from the SolarEdge monitoring portal shows the system’s physical layout. The blue color code indicates the performance level of each module and proves that each module requires its own individual MPPT. The individual tracking enables any issues to be pinpointed on the virtual site map.



The chart view from the SolarEdge monitoring portal shows the performance of individual modules. This graph illustrates the power of each module is optimal and independent of other modules.