

Enphase Fuels Petrol Station With Safe Solar

CHALLENGE

Avoid safety risks associated with installing and operating high-voltage solar inverters at a service station

SOLUTION

Enphase's all-AC microinverters eliminate high voltage DC, minimise outside cables, and reduce arc fault risks

RESULT

20kW system delivers 50% of all daytime energy consumption



“The added safety benefits of the Enphase System appealed all of our customer’s many concerns.”

— Barry Winter
Sales
Solar PV Commercial

When Stan Wilson’s dad built their family-owned and operated service station in the mid 1950s, he never anticipated today’s escalation of power prices. Now, Stan has a long-term plan to move away from grid-supplied electricity and is using Enphase Energy to make the solar switch.

Freedom from Power Prices

The Oasis Service Station in Tuncurry, NSW, operates from the early morning until late into the night each day, draining electricity along the way. With load spikes in the morning and at night, Stan turned to solar as a way to cut the station’s ever-rising expenses and hired Solar PV Commercial as his installer.

Solar PV Commercial, which began as a modest residential installer in 2001 then grew into an experienced commercial installer in NSW, came to the job knowing just what Stan needed—Enphase.

Safety First

When working with a petrol station to design a suitable solar solution, safety is the highest priority, and Stan needed a safe system with technology they could trust.

“The system is located on top of the 30 by 15 metre canopy, directly above the fuel dispensing facilities, with a 5,000 litre above-ground LPG gas tank close by. There is also large underground storage for the petroleum products, which have to be vented to the atmosphere,” said Stan Wilson. “I felt that standard single inverters posed a potential safety risk due to the high DC voltages being carried in the cables from the panels to the inverter. Then Solar PV recommended Enphase Microinverters, and I knew it was a much safer alternative.”

Typical string inverter systems can carry voltages of up to 600VDC down the cables to the inverters. The Enphase Microinverters receive extra low DC voltages of around 30VDC on a sunny day, with a maximum of 48VDC, from each single module. From the microinverter onwards, standard AC voltage is carried through the cables to the main switchboard, no different than other electrical components on site.

While string inverters increase safety risks by requiring high voltage DC cables to be run across the roof surface; Enphase Microinverters are designed with an all-AC approach to reduce voltage and require a lower level of external wiring and cabling insulation to further minimise hazardous safety risks.

INSTALLATION SUMMARY

Client **Oasis Service Station**

Location **Tuncurry, NSW**

Completion Date **June 2014**

Installer **Solar PV Commercial**

System Size **20kW**

Microinverters **Enphase M215**

Modules **Trina Solar 250W**

About Enphase Energy

Enphase Energy revolutionises solar power generation with industry-leading technology innovation. Enphase’s proven micro-inverter technology maximises production of each module, which works together with advanced communications hardware and an intelligent software platform to deliver a reliable, high-performance solar array.

To find how Enphase can help cut your energy bills and carbon footprint, visit enphase.com/au.



Solar PV Commercial finds the Enphase solution attractive because of its one-product line, simplifying preparation and installation time and making inventory easier.

Expandable System for Future Additions

The 20kW system installed by Solar PV Commercial is just the beginning. Enphase’s simple plug-and-play design makes it easy for Stan to expand his system at Oasis Service Station and add more microinverters in the future.

But safety and expandability weren’t the only reasons Stan was attracted to Enphase. Enphase Enlighten connected with E Gauge monitoring provides a way for Stan to track performance of the system. Enlighten also gives him a way to load match, adjusting the station’s power consumption patterns to get maximum benefit from his solar investment, and relying on grid supplied power only when necessary.

The Enphase System will deliver roughly 50 percent of Stan’s daytime energy needs from solar power. This reduced electricity demand will save money and fuel the future of The Oasis Service Station.