Site Energy Report – Food Supermarket

Voltage as a Service (VAAS)™ is an energy-saving service solution for regulating and optimising the voltage supplied to electrical equipment to the optimal level for efficient operation. The purpose of VAAS is to reduce energy consumption, lower electricity bills, and decrease carbon emissions by ensuring that electrical devices operate at their most efficient voltage level.

Executive Summary

Objective	Report on energy usage and savings using Voltage Optimisation
Site Location	Site #0675 Regional Victoria, Australia
Facility Type	Food supermarket
Time Period	A 6 month period, from 18th July 2023 through to 31st December 2023

Methodology

Data Collection	3 phase energy meter
Communication	4G wireless. 1 minute interval messaging
Sample interval	1 minute interval data, 30 minute integration
Data storage	iStar Cloud Repository
Accuracy	Class 1 accuracy
Analysis	IPMVP regression analysis to determine VO energy savings performance

Site Configuration

The total load (C = A + B) is supplied by the total of the incoming grid supply and solar PV generation.

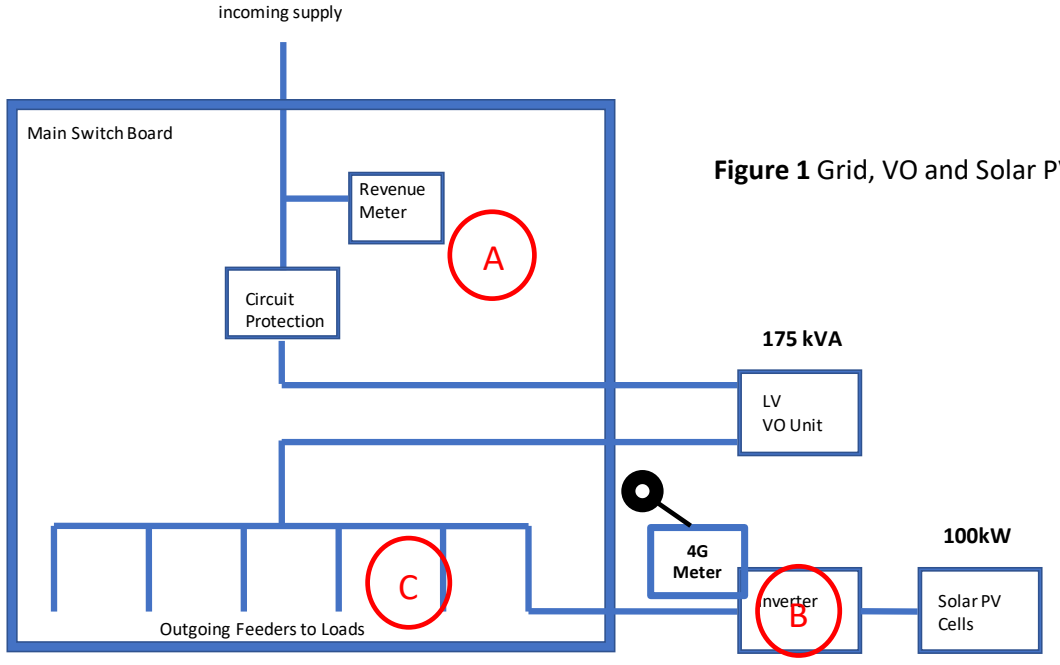

Figure 1 Grid, VO and Solar PV configuration

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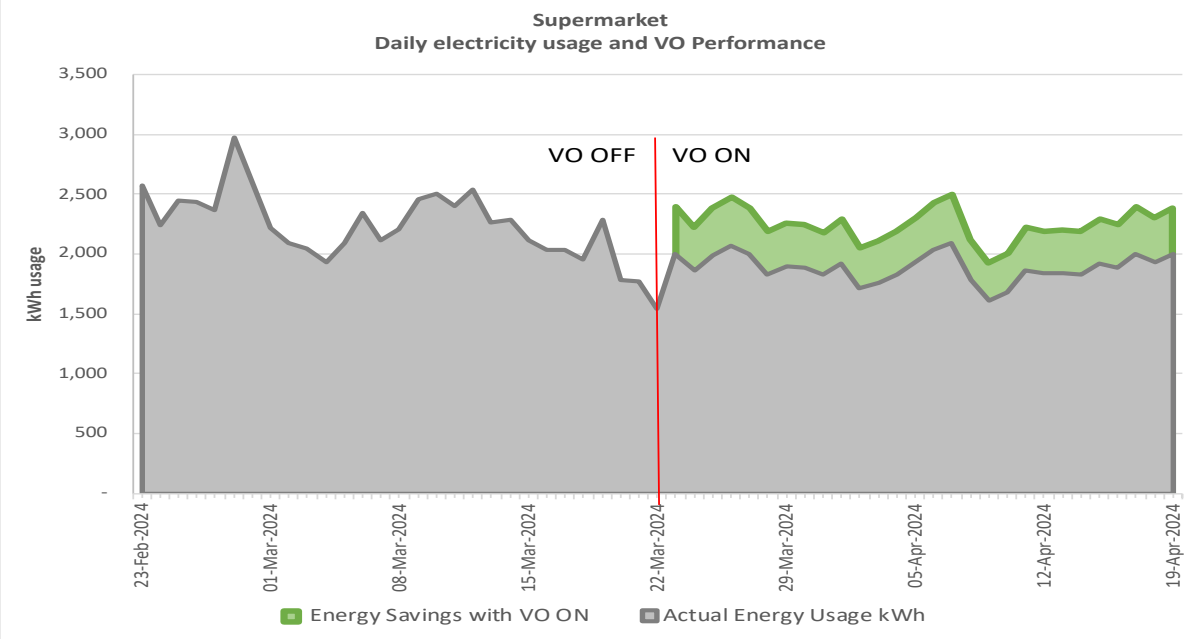
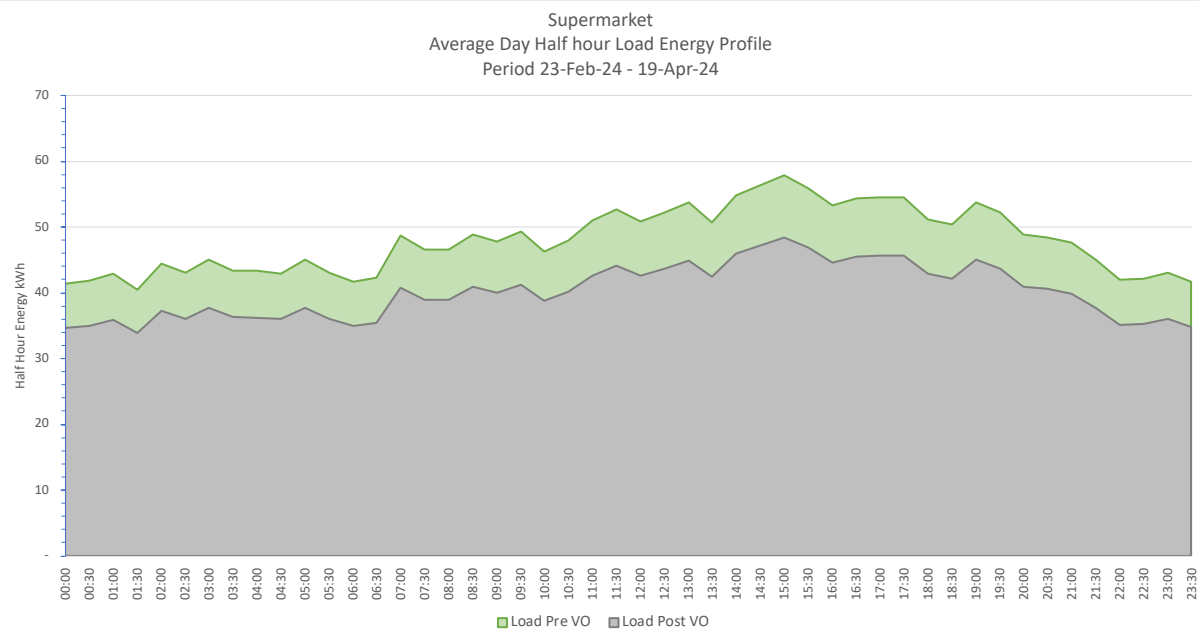
The conclusion following IPMVP analysis is that energy savings of 16.3% kWh are directly attributed to Voltage Optimisation at the Food Supermarket facility.

Figure 2 Daily Energy Usage and VO Performance



Voltage Optimisation reduces the load consumption. The benefit of reduced load usage is reflected in reduced grid supply energy, whilst the Solar PV Generates unaffected by Voltage Optimisation.

Figure 3 Average day load profile showing the benefit of VO (for the study period)



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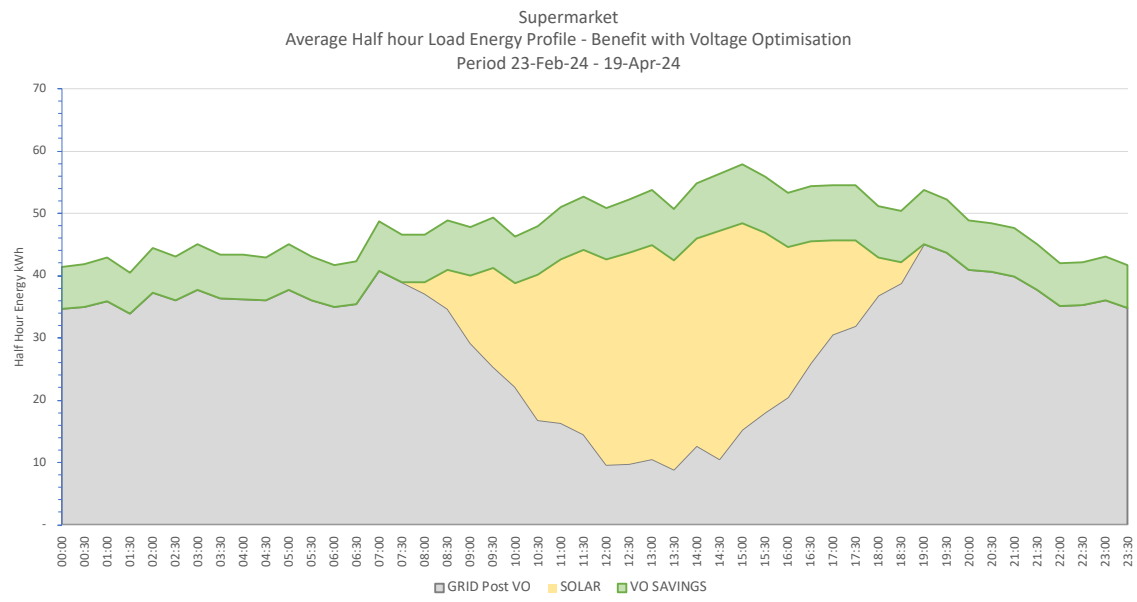
The contribution of Voltage Optimisation operating alongside the on-site Solar PV generation for the study period (23-Feb-24 to 19-Apr-24) is shown in Figure 4 below.

Figure 4 Contributions of Grid Supply, Solar PV generation and VO Savings



Conclusion

The conclusion following IPMVP analysis is that energy savings of 16.3% kWh are directly attributed to Voltage Optimisation at the Food Supermarket facility.

Voltage Optimisation has had a significant benefit at the Food Supermarket facility. Due to the variability in activity and factors driving energy usage, a regression analysis was performed.

The analysis has been careful to ensure methodological rigour, and attention to detail, to explain variation in energy usage across the period.

The case study is a very good example illustrating the value of Voltage Optimisation to energy savings, as well as complementing a Solar PV installation.

Voltage Optimisation offers both immediate and long-term financial benefits while aligning with broader strategic goals related to sustainability, operational efficiency, and risk management. These benefits make VO an attractive proposition for businesses looking to reduce energy costs, enhance their environmental credentials, and improve their overall competitiveness.

VAAS can provide a very useful contribution to a company's plans to meet its Carbon emission targets, as well as reporting requirements. VAAS provides the right voltage to electrical equipment, ensuring efficiency, cost savings, environmental benefits and performance reporting while maintaining equipment performance and longevity.

For further information, contact us at sales@vaasco.net

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