

Site Voltage Report - Club

Voltage as a Service (VAAS)TM 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 grid supply voltage, and effect of Voltage Optimisation
Site Location	Site #2001 New South Wales, Australia
Facility type	Club (hospitality)
Time Period	An 8 month period, from 1 st January 2024 through to 27 th August 2024

Methodology

Data Collection	3 phase voltage meter
Communication	4G wireless. 1 minute interval messaging
Sample interval	1 minute interval data
Data storage	iStar Cloud Repository
Accuracy	Class 1 accuracy

Summary Statistics

Statistic	Average Load Voltage	Minimum Load Voltage	Maximum Load Voltage	Average Grid Voltage	Minimum Grid Voltage	Maximum Grid Voltage
Mean	228.16	227.76	228.61	248.16	247.54	248.81
Median	227.83	227.30	228.40	248.27	247.70	248.90
Mode	227.03	226.90	227.20	248.37	248.00	248.80
Minimum	224.93	224.70	225.40	232.50	228.90	234.40
Maximum	249.70	249.30	250.20	253.20	252.80	253.80
Range	24.77	24.60	24.80	20.70	23.90	19.40
Standard Deviation	1.20	1.15	1.30	1.80	1.90	1.77
Sample Variance	1.44	1.33	1.68	3.24	3.62	3.12
Kurtosis	(0.03)	0.33	(0.37)	(0.52)	(0.52)	(0.49)
Skewness	0.77	0.96	0.55	(0.15)	(0.20)	(0.10)
# Samples Read	319,366	319,366	319,366	319,366	319,366	319,366
Start date	1/1/2024	1/1/2024	1/1/2024	1/1/2024	1/1/2024	1/1/2024
End date	27/8/2024	27/8/2024	27/8/2024	27/8/2024	27/8/2024	27/8/2024
Days	240.00	240.00	240.00	240.00	240.00	240.00

Figure 1 Average Grid Voltage – 1 minute average - 6 month period

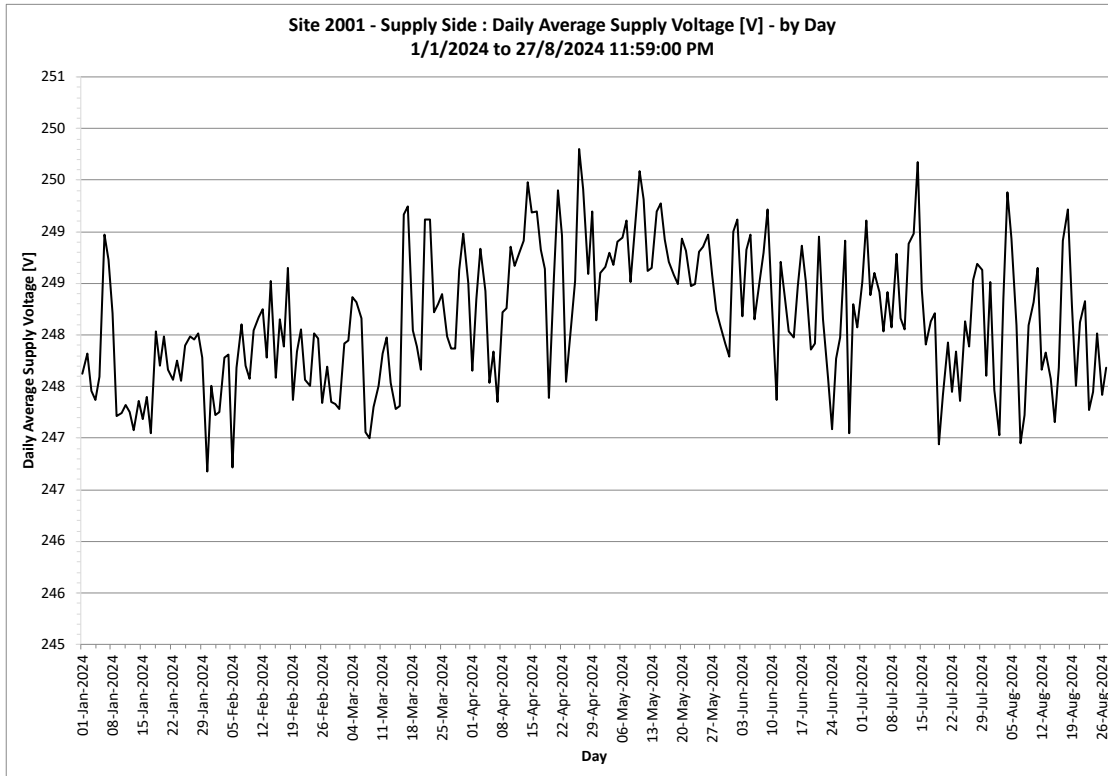


Figure 2 Average Load Voltage – 1 minute average - 6 month period

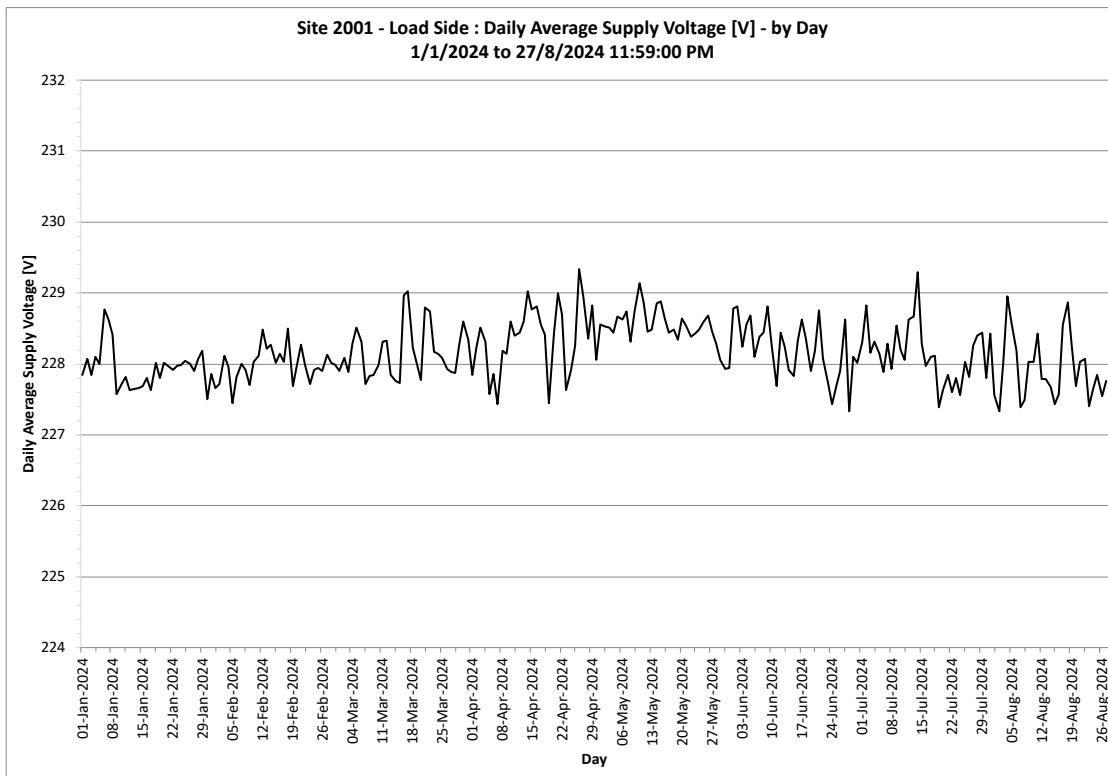


Figure 3 Average Time of Day Grid Voltage – Min, Avg and Max 1 minute average - 6 month period

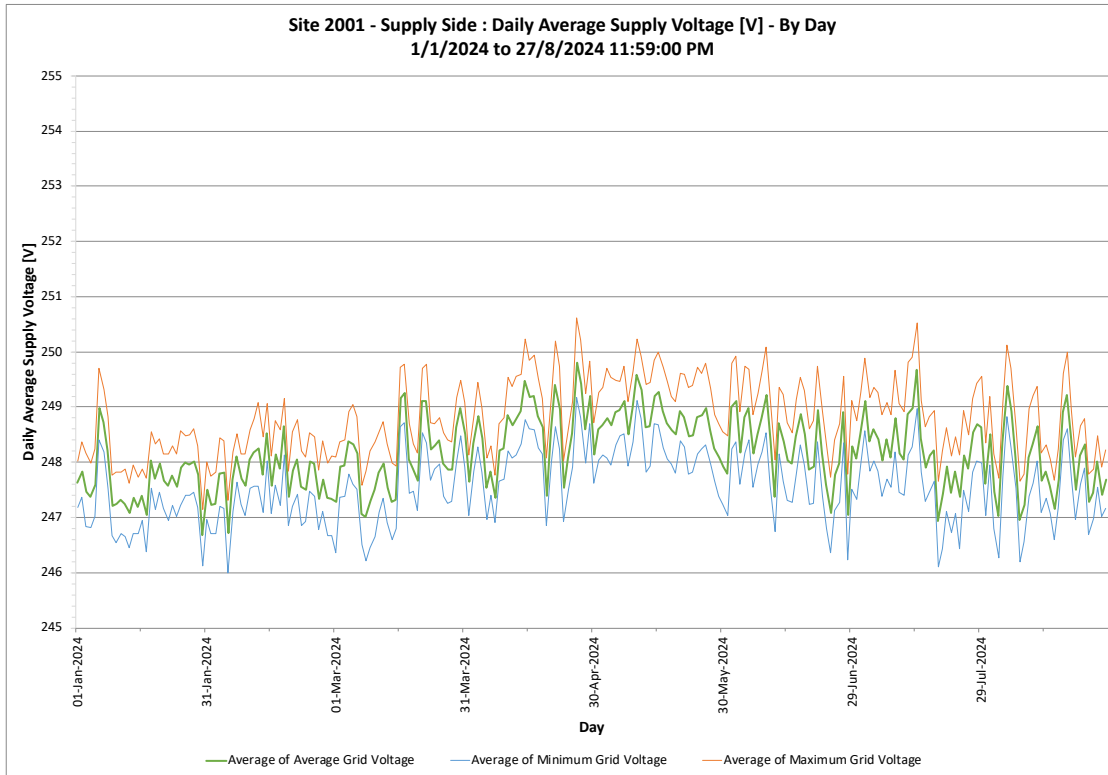


Figure 4 Average Time of Day Load Voltage – Min, Avg and Max 1 minute average - 6 month period

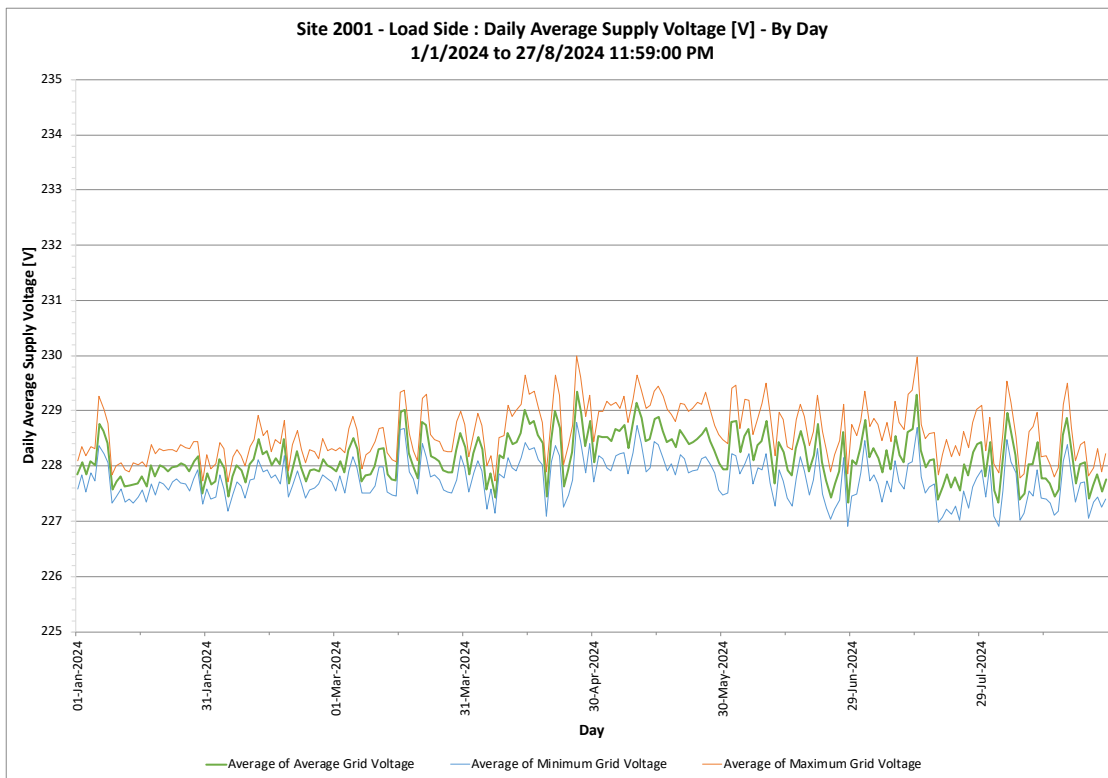


Figure 5 Average Time of Day Grid Voltage – 1 minute average – By week - 6 month period

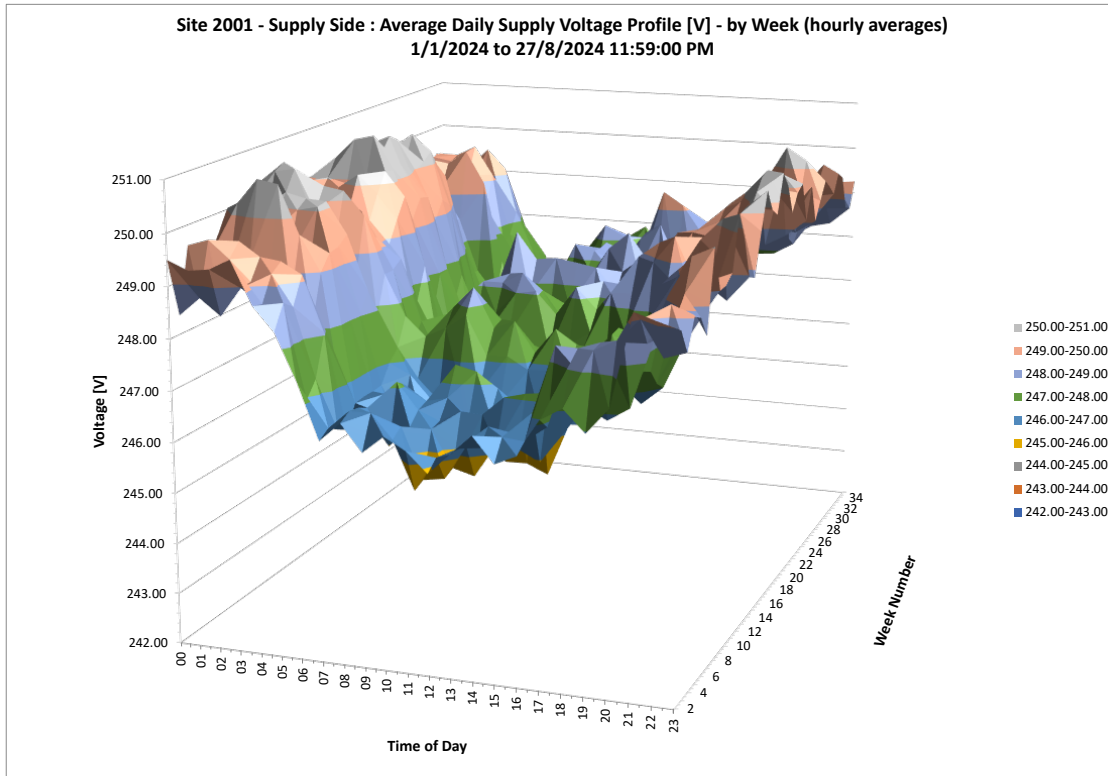


Figure 6 Average Time of Day Load Voltage – 1 minute average – By week - 6 month period

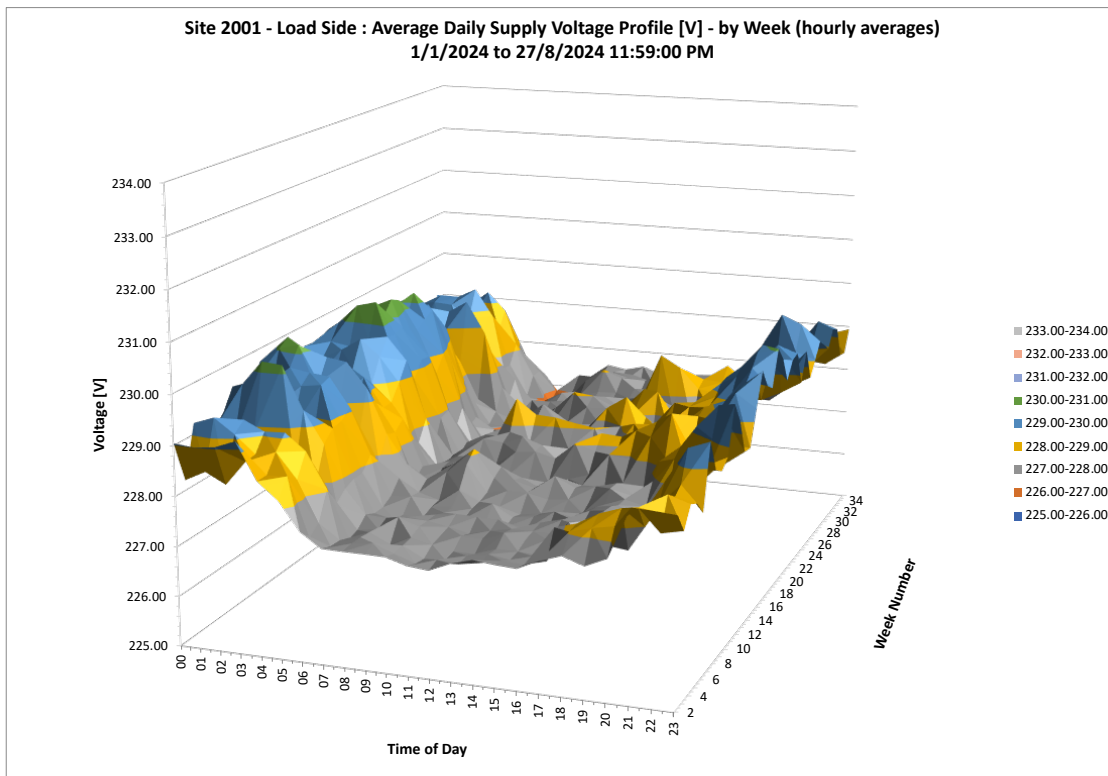


Figure 7 Average Grid Voltage - Histogram – 1 minute average – 6 month period

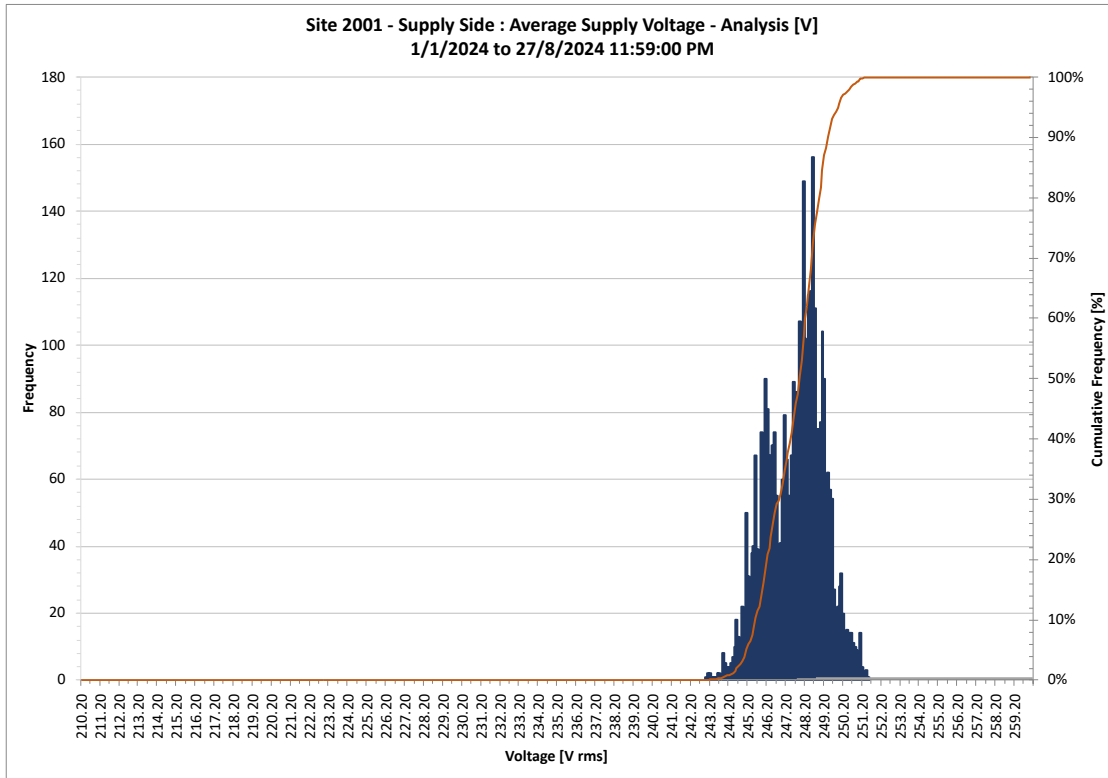


Figure 8 Average Load Voltage - Histogram – 1 minute average – 6 month period

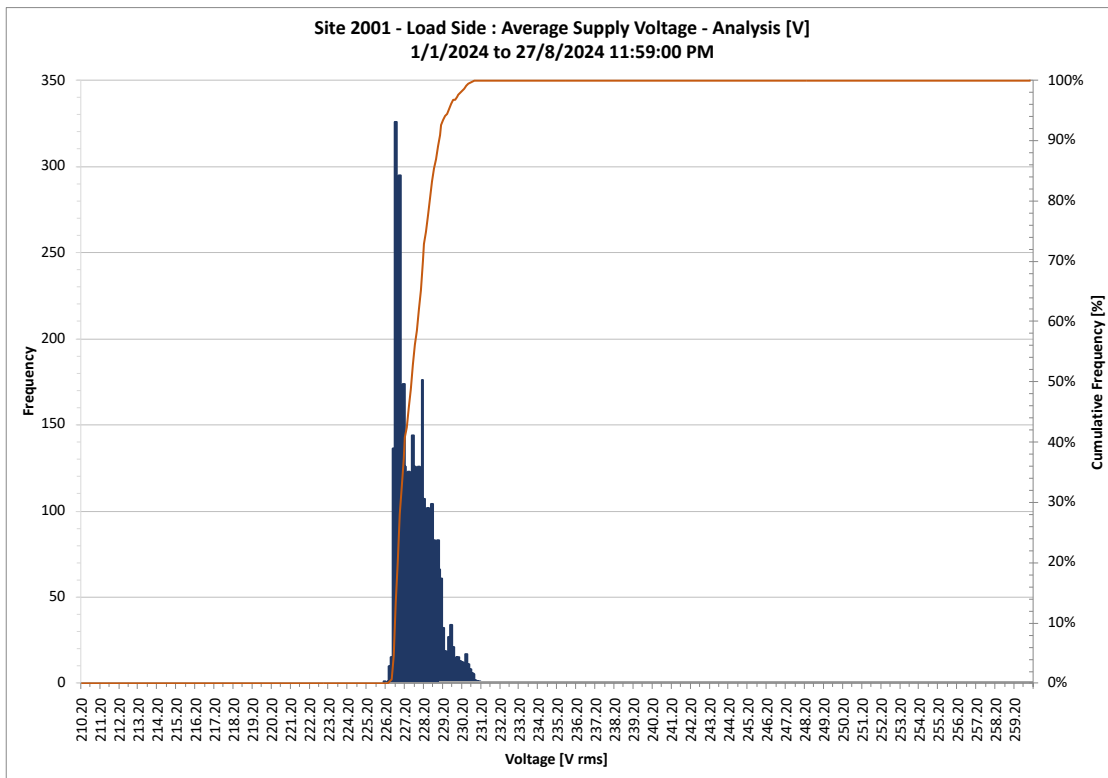


Figure 9 Average Grid Voltage - Box Whisker Plot – 3 phases - 1 minute average – 6 month period

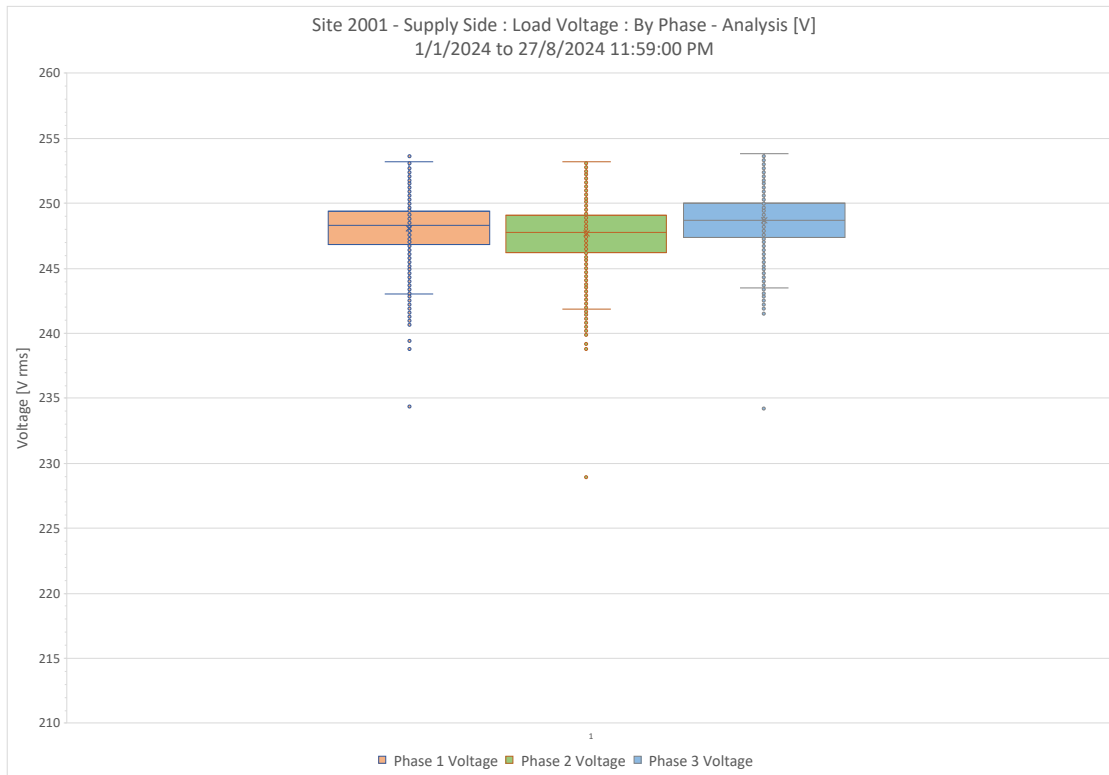


Figure 10 Average Load Voltage - Box Whisker Plot – 3 phases - 1 minute average – 6 month period

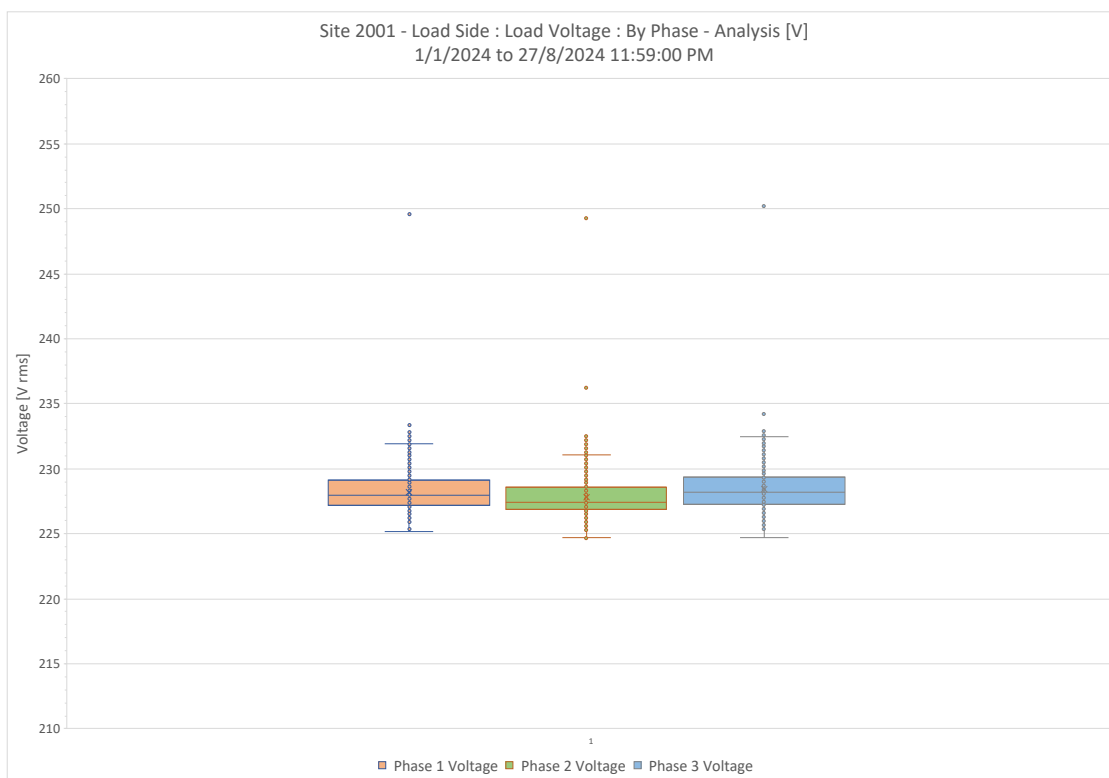


Figure 11 Grid Voltage – Average Daily Supply Voltage Phase Imbalance

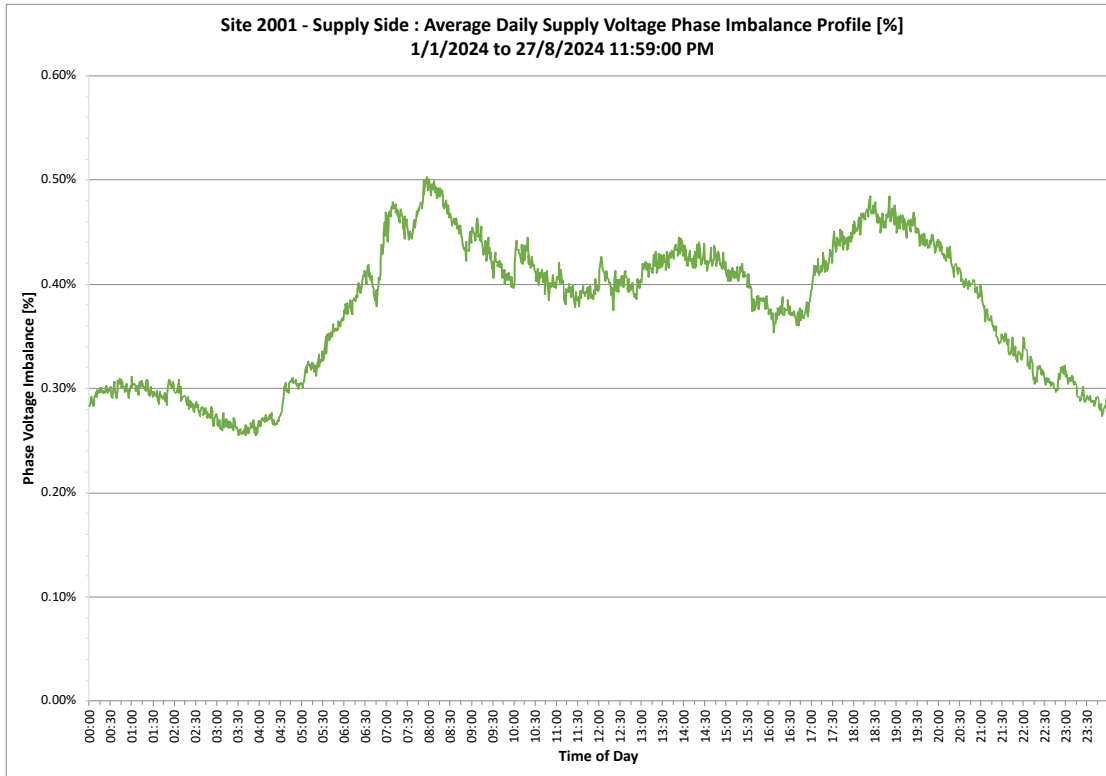
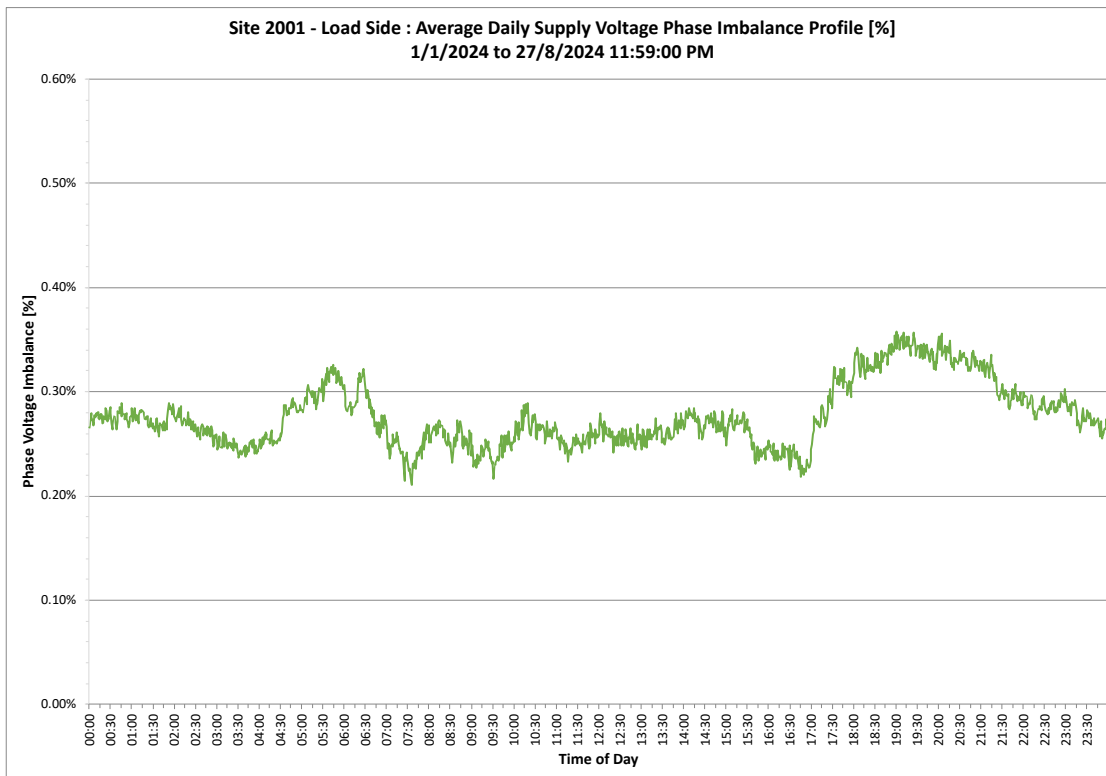


Figure 12 Load Voltage – Average Daily Supply Voltage Phase Imbalance





Conclusion

In this example, using data over an 8 month period, Voltage Optimisation had the following effects:

- reduced voltage level
- reduced voltage variability
- reduced phase imbalance

A companion report provides the effect on energy consumption at the facility site (refer AN 2426).

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

VAASCO GROUP

VAASCO Group Ltd ABN 80 653 685 164
corporate HQ – Suite 3, Level 10, 45 William Street, Melbourne VIC 3000 Australia
correspondence - PO Box 7, Flinders Lane Victoria 8009 Australia

phone +61 2 9475 0971

fax +61 2 9475 4055

email sales@vaasco.net

web www.vaasco.net