
THE CLEAN ENERGY PROJECT

Industria Energy

CASE STUDY

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INDUSTRIAENERGYCO.COM

COMPANY CASE STUDY

For the consideration of the company Haven Health Globe on identifying energy usage and significant energy saving performance



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Industria Energy's Independent Study

ABSTRACT

Industria Energy, a USA based company has compiled this complimentary study for Mr. Jason Seastrand of Haven Health. The data collection, documentation and reporting was provided in conjunction with partners at Satic USA. This study and data collection report is intended to offer insight into the *potential energy savings and benefits gained from the implementation of 'Energy Management Equipment'*. Specifically for this case study Satic Power Perfect energy management systems were used. The test site was **Haven Health Globe**, and the electrical panel selected for the test was one Air Handler panel, which from this point on will be referred to as 'the panel'.

As the basis of our discussion; 'Energy Management' can be either active and dynamic, or the static management of the electrical current in a particular system. It is this writer's belief that it should take into account and address each of the 7 key attributes to Alternating Current. For the readers benefit we have included a Lexicon of electrical terms as the last page of this brief. For quick edification Volts = Pressure, Amps = Current, Watts = Real Power, THD = Total Harmonic Distortion, EMF = Electro Magnetic Fields, Resistance = Losses as electricity travels.

Addressing each of these attributes, on every possible electrical pathway guarantees clean electricity throughout the entire distribution system. In order to condition the energy inside of this particular building, with the outcome being the conservation of energy, we installed units to regulate voltage and filter electrical surges, eliminate negative harmonics (which create EM Radiation) and reduce amps.

A 3 Phase Satic Power Perfect Box was installed at the distribution panel. There are non-quantifiable economic savings that may be noticed resulting from the reduction of wear and tear by reducing amps and controlling voltage for the equipment connected to "The panel". Haven Health of Globe should purchase less replacement equipment. In addition to the economic benefits experienced via a lower utility cost, though the implementation of Satic equipment Haven Globe will also be provided with the following benefits; voltage regulation, surge protection, harmonics elimination, EMF reduction, and increased equipment longevity.



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INTRODUCTION

My name is Cade Adams; I am the President of Industria Energy. Industria Energy has been contracted with Satic Inc. to facilitate data collection, verification and reporting. It is the objective of this study to gather and present accurate, understandable and usable data to help assist Haven Health to make a decision on clean energy, saving money, reducing maintenance costs and addressing concerns involving EMF exposure, and providing surge protection to the entire electrical system to Haven Globe.

Industria Energy, and Satic Global Energy System (GES) performed an energy audit on the Panel of an Air Handler. The report and test represent a dynamic uncontrolled 4 day assessment of electricity consumed by the panel.

It is the intent of this report to provide an onsite assessment to show the economic feasibility of an electrical retrofit of the facilities at Haven Globe. The intent is to increase Power Factor (PF) efficiencies, eliminate harmonics, eliminate Electromagnetic Radiation EMR, control voltage fluctuations, increase equipment longevity and provide protection from energy surges for the building and its equipment.

Surge Protection

Negative Harmonics

Increased Cash Flow

EMF Reduction



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TESTING EQUIPMENT

The electricity metering and data logging equipment used for this audit was a OWL Intuition monitor and control meter. Energy readings for KW, KWH and other info. The results of the spreadsheet calculations are presented in the included Reports. The spreadsheet calculator will be outlined below.

The OWL data logging monitor records energy data and saves it as kilo-Watt hours in a 8-15 second time stamped format. The data was transferred to Excel using CSV format and then processed for statistics and graphing. A feature Satic Global Energy System purports to help moderate and stabilize voltage fluctuations. The OWL data logs were processed using Excel to produce tables, averages, medians, standard deviations and graphs for daily and constant reporting.



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AUDIT OVERVIEW

Audit #1

The first four days of the energy audit beginning 6/21/2021 at 12am involved monitoring the unconditioned three phase power fed to the panel. There was no addition of Satic Energy System management equipment to the building circuits. The instant energy values on the system at the units manual disconnect lugs were monitored with the OWL. The electrical energy consumed by the panel was monitored and logged with the OWL, which was installed at the panel the source side of the switch. The OWL energy data is saved as total kWh, and total KW consumed in a format.

Audit #2

The next 4 days of the audit began 6/25/2021.

The Energy readings were monitored with the OWL prior to and after the installation of a Satic model energy conditioner. The proposed results can be viewed below. The conditioner was mounted in the service lugs on the primary disconnect. The OWL was left as it was in the first week of assessment.

The energy values metered in the distribution panel allowed for a Satic panel conditioner which was installed on the Panel for this specific audit, at 2pm on 6/25/2021. The OWL was left on the panel. The OWL recorded and reported the total kW, and KWH of electricity used by the panel.

The OWL and Conditioner were finally pulled on 6/29/2021 at 2pm, when testing was concluded on the Panel.



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CONCLUSION

To summarize the testing period, the study found a net electrical total power consumption reduction of 18% when conditioning with Satic Power Perfect unit. As reflected in the tables below (Graph) a consistent savings is shown in hourly, daily and weekly totals of data logged energy consumption.

The data showed 5317.28 kilo-Watt hours of electricity consumed by the panel in its original unconditioned state. The data showed 4342.60 kilo-Watt hours of electricity consumed by the panel when the Satic equipment was incorporated into the electrical system. The logged usage shows consistent usage patterns. The resulting incorporation of Satic units provided an energy savings of 974.67 kilo-Watt hours, a **18% reduction in energy.**

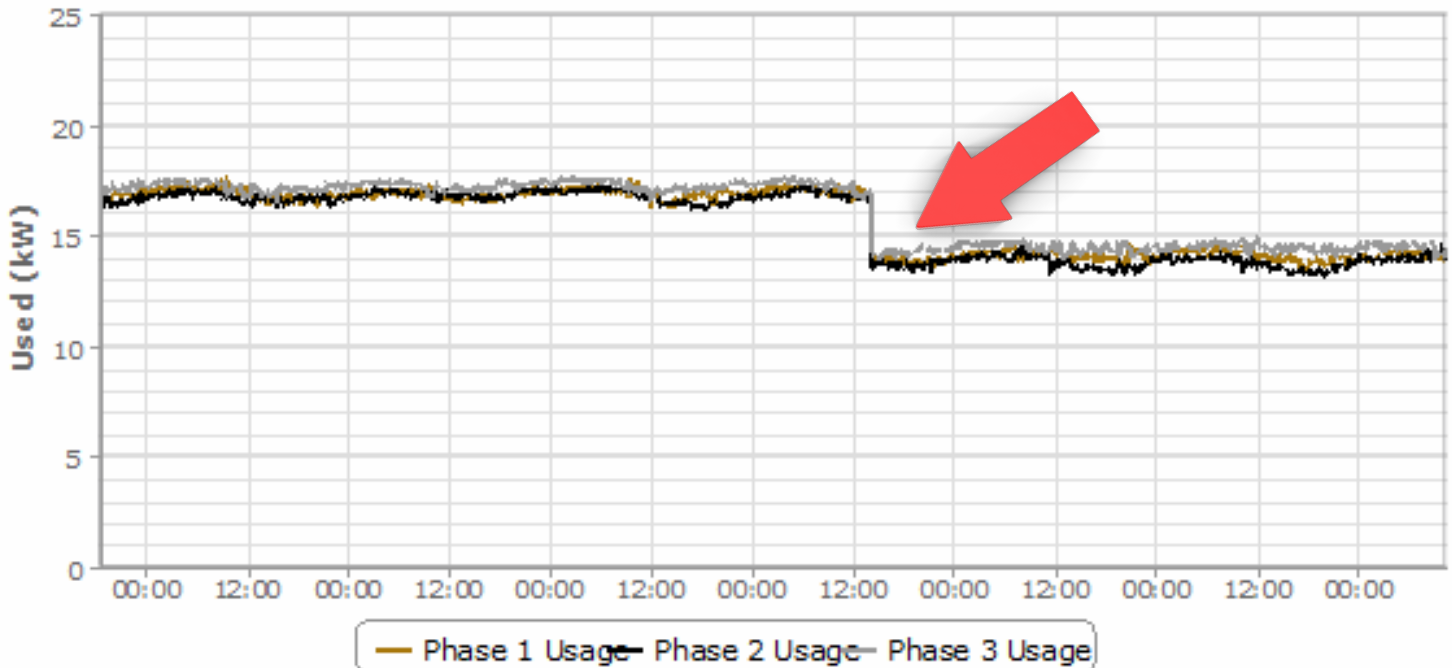
Utility Company billing schedules are complex and often vary greatly. For simplification of math and the ability to use decimal math a base rate of \$0.04 cents per kWh will be used for a quick savings analysis. The Panel saved 974.67 kWh of power in 4 days. Plus additional savings on KW are show below as well. The total reduction form that was 19%. Harry Cranswick was the gentleman that helped flip the satic breaker on. You can see on the graph, and info, that it was turned on at 2pm, and that it set a whole new baseline on all 3 legs of power instantly. Not calculated in this analysis is from utility peak demand rate charges and equipment longevity. We will estimate that on a new proposal. With a full retail installation expense of \$2,200.00 US dollars the estimated return on investment is 8.56 months.



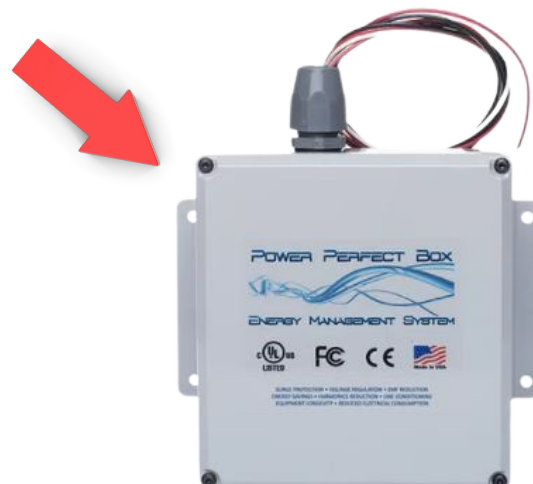
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THE PANEL ENERGY USAGE & RETURN ON INVESTMENT OVERVIEW

3 Phase Electricity Used (kW)

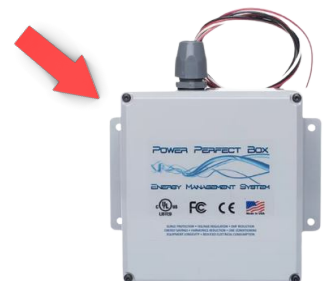
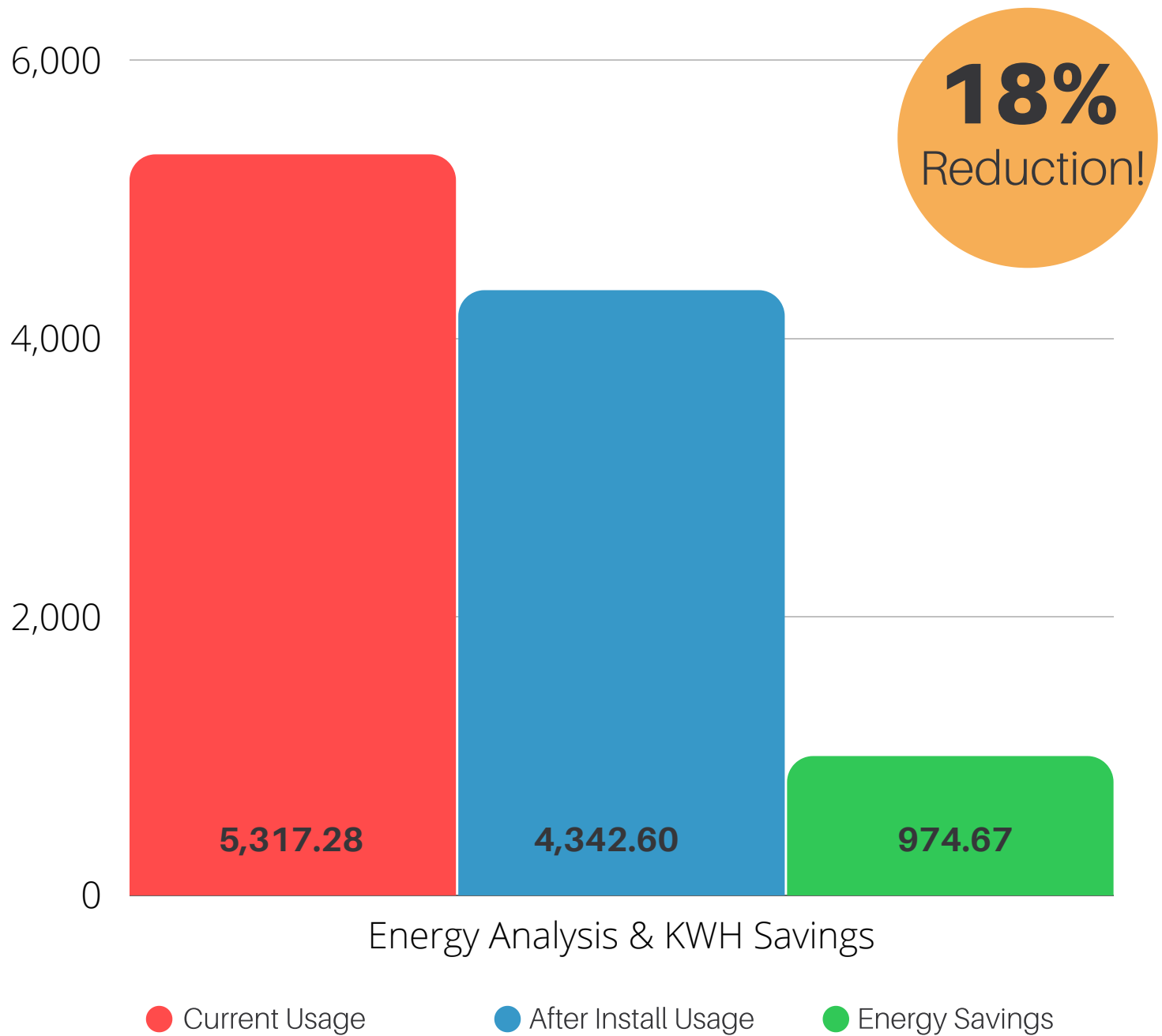


IMMEDIATE SAVINGS AFTER INSTALL



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THE PANEL ENERGY USAGE & RETURN ON INVESTMENT OVERVIEW



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LEXICON OF TERMS

Alternating Current has 6 major attributes: Power Perfect addresses each

Volts = Pressure

Amps = Current

Watts = Real Power

THD = Total Harmonic Distortion

EMF = Electro Magnetic Fields

Resistance = Losses as electricity travels

VOLTS Voltage Regulation = SAFETY

~ Voltage regulation corrects the dips and trims the peaks with robust surge protection for entire electrical system.

AMPS Phase Correction = EFFICIENCY

~ Improved phase quality increases power factor and reduces amps. Reduced amps mean less heat and waste, increasing efficiency, performance and life for all electronics.

WATTS Reduced Electrical Consumption = SAVINGS

~ Reduced electrical consumption means lower utility costs. Fewer amps are converted into heat and wasted in I²R losses. Cooler equipment also runs more efficiently and lasts longer.

THD Negative Harmonics Reduction = PRIVACY

~ Harmonics degrade video and audio quality. A clear TV or computer picture while the vacuum is running also means privacy, as signals sent over electrical lines are filtered and interrupted. Negative harmonics filtered are recaptured and recycled for additional savings.

EMF Electro Magnetic Field Reduction = HEALTH

~ Less inductance and improved power quality will consistently increase efficiency. Much has been written on the harmful effects of EMF's and 3rd party data has shown our products to drastically reduce EMF & EMF(R) radiation by as much as 98%.

RES Resistance losses are reduced as amps are reduced.

Addressing each of these attributes, on every possible electrical pathway guarantees clean electricity throughout your entire distribution system and is what we call ~ Power Perfect.