



Case Study:

**PowerRanger Automatic
Power Factor Correction System**

Model PR50: 208V, 50 kVAR

**Facility: Gas station / C-Store
31 pumps + adjacent gaming**

Location: Southern Nevada

Utility: NV Energy

The Case Study documents power consumption at a Gas Station / Convenience Store through a 4 month test period and compares the power consumption at the facility to the same 4 month period from the previous year.

- **Spread sheet and graph data were taken from utility billing statements shown on pages 8-13.**
- **Utility rate structure includes charges for Kilowatt Hours, Demand Charges, Facility Charges, and Power Factor Penalty.**
- **No loads were added or removed during the test and comparison period.**
- **Power Factor prior to test period was measured at 69%. Power Factor during the test period was measured at 98%.**
- **Operational employees at the facility were not informed of the test.**

Electric Consumption and Cost Savings

Meter #850224100548	kWH billed	Dollars billed	Utility cost reduction 6 month average	Demand & Facility * charges billed	Demand charge reduction	Demand kW	
11/5/2010	1,171,584	\$72,863.83		\$9,993		2,182	
12/8/2010	1,141,660	\$76,576.67		\$9,829		1,855	
1/8/2011	1,183,863	\$72,906.87		\$9,902		2,000	
2/8/2011	1,104,201	\$68,504.87		\$9,861		1,918	
3/10/2011	1,147,740	\$68,897.99		\$9,811		1,817	
4/8/2011	948,133	\$65,900.62		\$9,876		1,948	
Nov to Apr Avg. kWH	1,166,197	\$70,575.13	Nov to Apr Avg billing	\$9,879	Nov to Apr average Demand charges	1,953	Nov to Apr Avg. Demand kW

\$423,450.75

11/4/2011	910,967	\$54,692.07		\$8,767		1,914	
12/7/2011	944,873	\$55,165.51		\$8,638		1,657	
1/7/2012	1,160,605	\$60,759.26		\$8,671		1,522	
2/8/2012	917,459	\$57,709.30		\$8,625		1,715	
3/9/2012	932,984	\$61,713.30		\$8,617		1,700	
4/7/2012	815,651	\$56,696.24		\$8,576		1,635	
Nov to Apr Avg. kWH reduced 10%	935,423	\$57,789.28	Nov to Apr Avg. billing reduced 18.2%	\$8,675	Nov to Apr Demand charge reduced 12.2%	1,691	Nov to Apr Demand kW reduced 13.2%

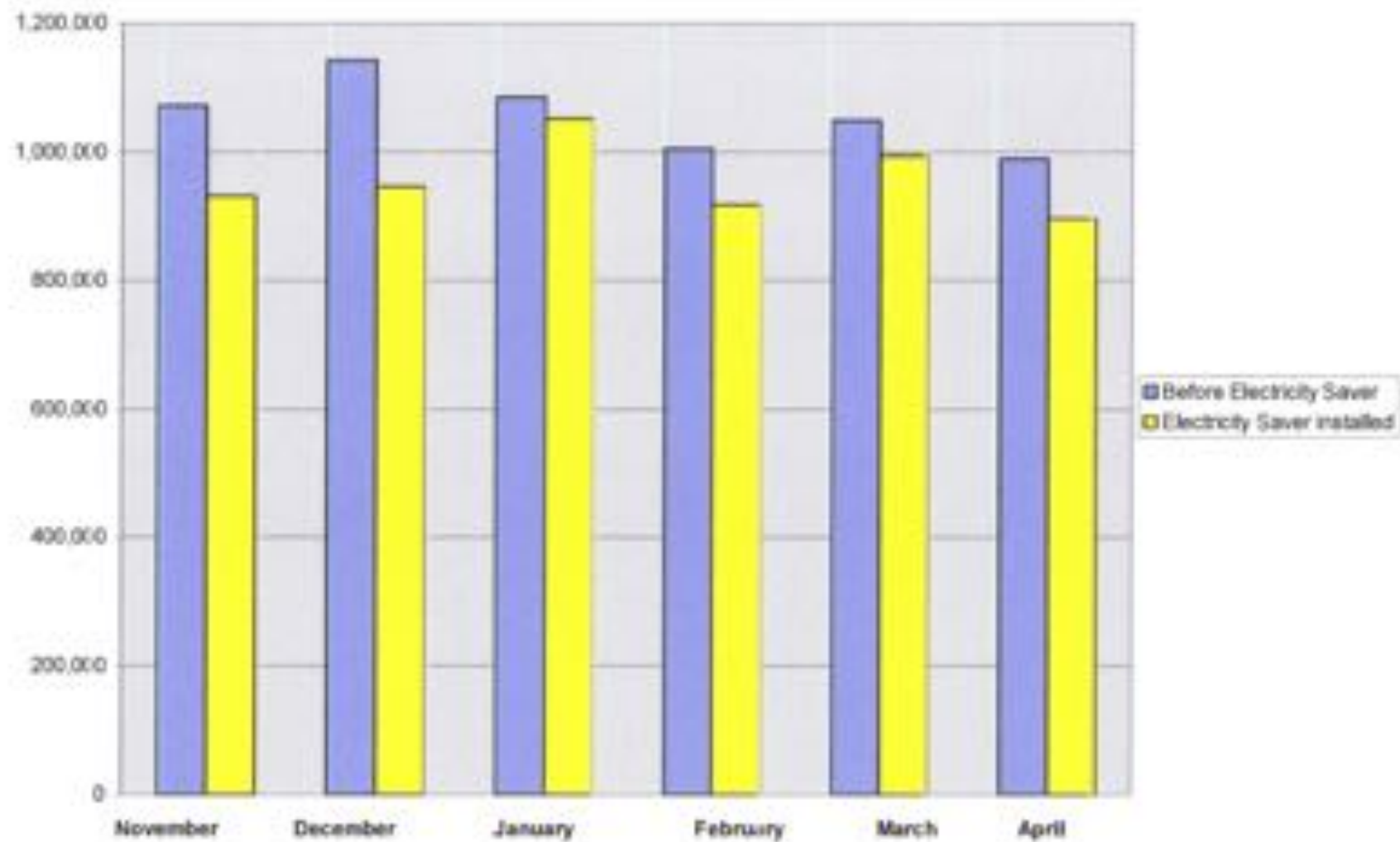
\$349,832.89

Actual Savings
6 month test period

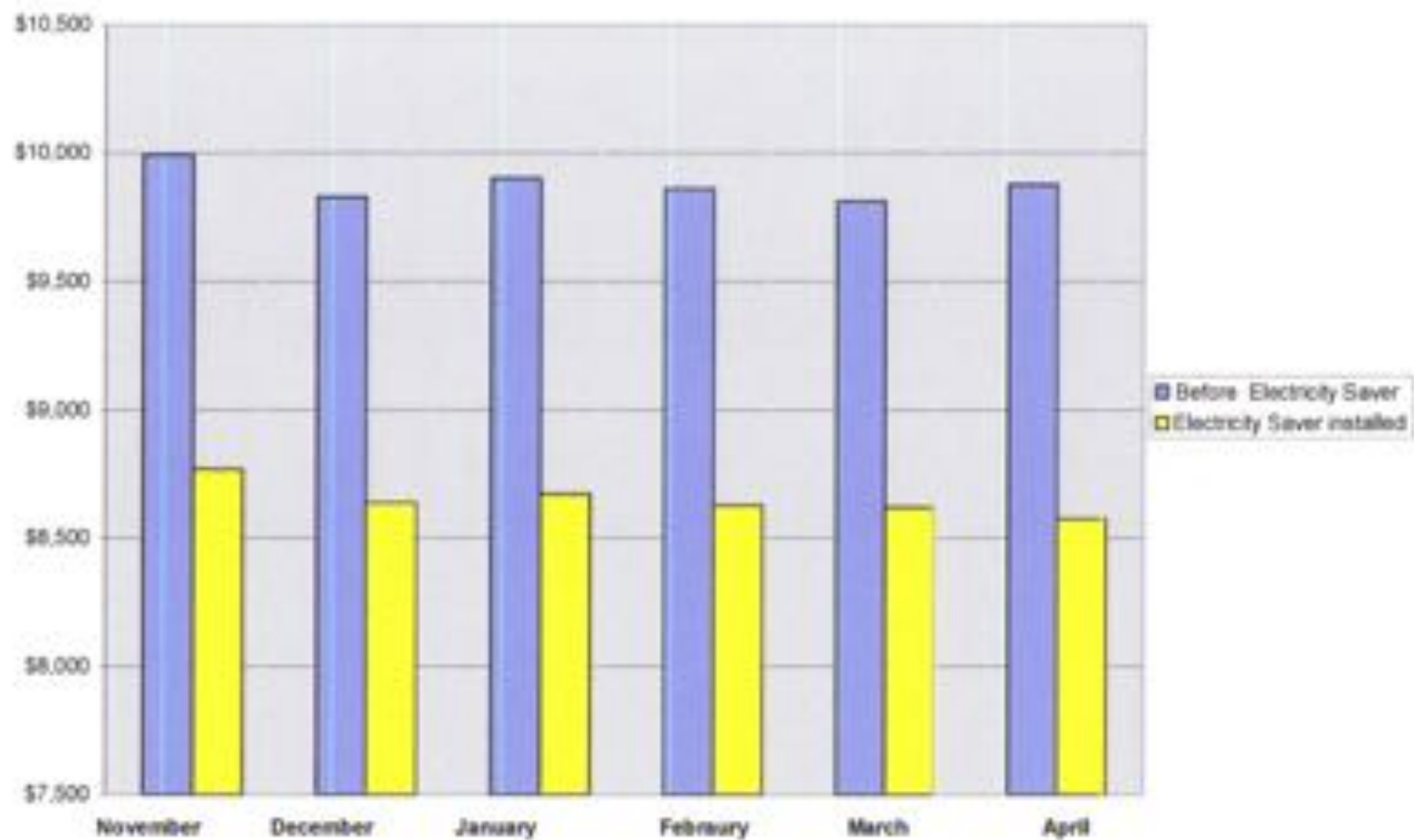
\$76,716.07

* Facility Charges are calculated using the peak kW draw in the past 12 months. Further reductions in Facility Charges will be achieved when the system has been in operation for 12+ months.

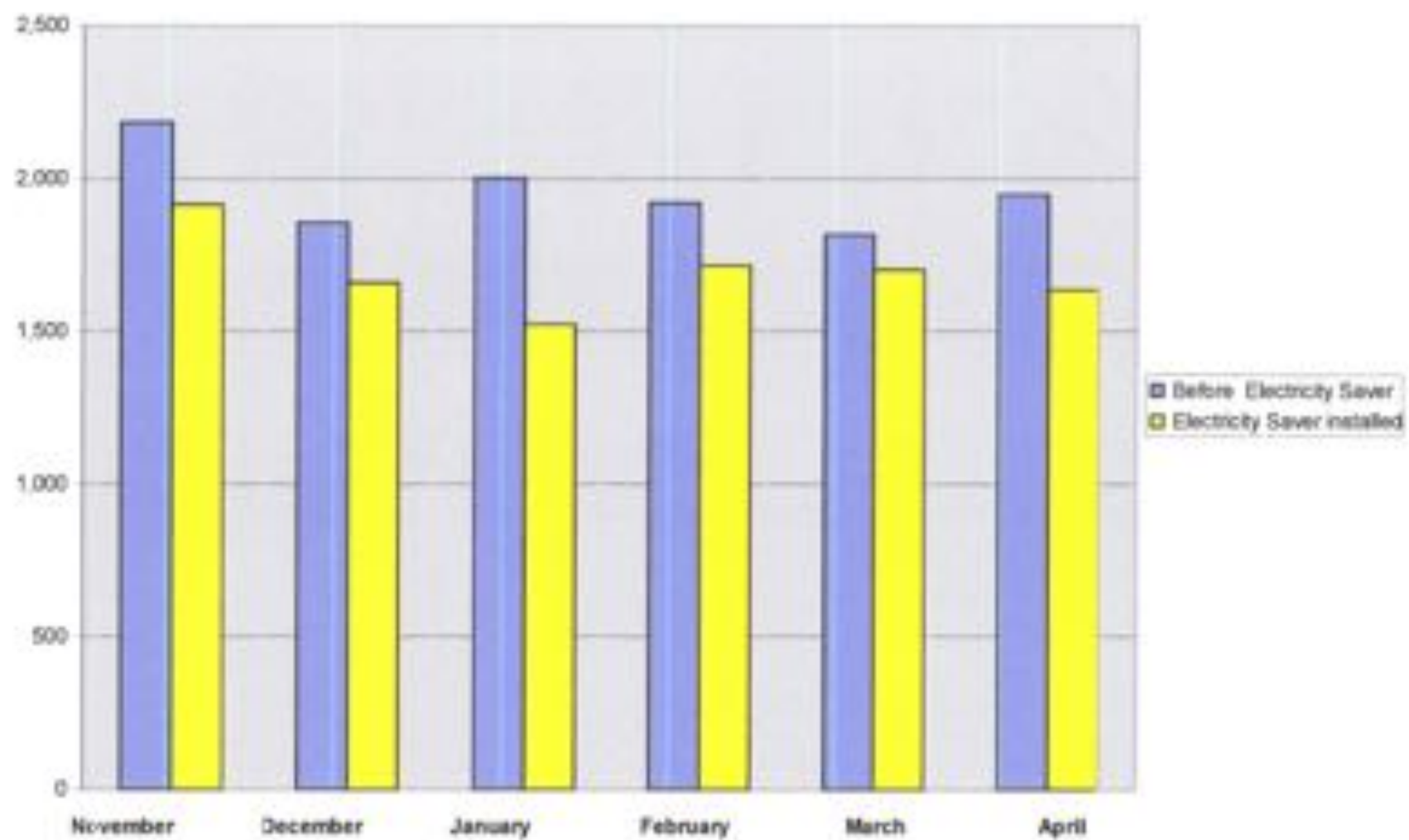
kWH Billed



Demand Charges Billed



Peak Demand in kW



Total Dollars Billed

