

Power Factor Correction



Energy Systems and Services Holdings (ESS) had installed a 50KVAr Power Factor Correction Unit at Prendergast Fasteners, Carrara in June 2016. An annual savings of \$3934 in electricity consumption charges was estimated in the proposal for the location based on the 2015 tariff rates. The network tariff had changed in the new financial year and the electricity charges for the current bill cycle after the installation of the PFC unit was compared to the electricity charges from last year. From the information provided by Prendergast Fasteners, the electricity charges for the time period between 01/07/16 to 31/07/16 was \$1,503.68. This is significantly less than the \$1994.35 for the period from 01/12/15 to 31/12/15.

Summary of Network Charges

A summary of the breakdown of electricity charges at Prendergast Fasteners, Carrara is shown in the table below. The tariff rates per KVA for the location has reduced since June 2016. The table below shows the monthly and estimated annual charges based on the older tariff rates.

Before Installation of PFC Unit

Current PF	KVA Consumption	Unit Cost	Monthly Charge	Annual Charges
0.70	89.8	\$22.19	\$1,994	\$23,928

A 50KVAr Power Factor Correction unit was installed at Prendergast Fasteners to improve the power factor at the location to 0.95. After installation, it was noted that the KVA consumption had reduced significantly.

After installation of PFC Unit

Current PF	KVA Consumption	Unit Cost	Monthly Charge	Annual Charges	Annual Savings
0.94	68.8	\$21.86	\$1,504	\$18,048	\$5,880

From the above tables, the total savings in a year is estimated around \$5,880. The total cost of Supply and Installation was \$8,723. From the actual values, the annual savings is much higher than the estimated savings in the proposal. Thus the installation of the Power Factor Correction Unit has been highly beneficial for Prendergast Fasteners, Carrara.

