



CASE STUDY

Consulting, Engineering and Installation of Renewable and Energy Efficiency Systems

Variable Frequency Drive Upgrade

SITUATION

Central Metal Finishing is a precision finisher providing electroplating, anodizing and coating services for aircraft, automotive, defense, electronics and communications manufacturers. Their manufacturing process requires high air volume turnover in a facility that operates at negative pressure. Groom Energy was engaged to identify and implement energy savings opportunities related to the existing ventilation system at this facility.

STRATEGY

Groom Energy engineers analyzed the operation of Central Metal Finishing’s existing air make-up units, exhaust fans and RTUs. The motors on these systems were all operating at full speed, 24 hours a day. By applying variable frequency drives (VFD) to seven motors driving the ventilation equipment, Groom Energy confirmed that it could more efficiently regulate the motor speeds based on the real airflow demand of the facility, without compromising performance. Groom Energy managed the entire VFD installation, confirming the savings for the local utility, which provided additional financial incentives supporting this project.

RESULTS

Through this upgrade, Central Metal Finishing reduced over 187,000 kWh annually from their electricity consumption and their GHG emissions by 183,000 pounds of carbon per year.



Lifetime Energy Savings	\$226,520
Annual Electrical Savings	\$27,830
Utility Incentive	\$14,800
Year One Total Savings	\$42,630
Installed Cost	\$59,110
Return on Investment	72%

