Case Study – Port of Oakland Project

SUMMARY

Clean Diesel Technologies, Inc.'s (CDTI) wholly-owned subsidiary, Engine Control Systems (ECS), helps reduce the emissions of over 600 trucks at the Port of Oakland by 85% within six months. By providing high-quality customer support, verified products and a team with a strong market presence, ECS distributors took 55% of the filter-installation business during this project.

More important, ECS distributors offered extreme customer service that created positive, word-of-mouth and a significant increase in new business that continues today.

THE CHALLENGE

After studies conducted by the Bay Area Air Quality Management District in California identified that residents in the Port area of West Oakland were three times more likely to develop cancer from exposure to diesel exhaust than other, Bay Area residents, they created the Port Truck Retrofit Program in July of 2009.*

Through a partnership between the Air District, the Port of Oakland, the California Air Resources Board, and the U.S. Environmental Protection Agency, the program was funded with a $2 million federal grant supplementing $20 million in state and local funds. The Port Truck Retrofit Program's goal was to quickly reduce the health risks from the truck emissions in the West Oakland community. All Port of Oakland drayage-truck-operators with model year 2003, or older vehicles lacking particulate exhaust filters, would be prohibited from entering the port after January 1, 2010.**

The Process

To meet the new requirements, truck operators had to buy a new truck or have the appropriate exhaust-filter installed on their current vehicle. However, grants were available to cover the cost of new, filter installations; truck operators were only responsible for paying the sales tax when applying for one of these grants.

For the retrofit project, it was necessary for ECS distributors to communicate the appropriate process with truck operators and obtain and compile accurate data. First, truck operators had to have a data logger installed in the right position on their truck to monitor and record the exhaust gas temperature, time and date.

Then, after driving the truck for a week, the operator returned to the installation area to have the data downloaded to a computer. This gave installers the emissions data necessary to prepare quotes, complete the appropriate, filter-installation process, send the right information to the Air Quality Management District, and receive payment via the grant.

It was a detailed process. And within a short, six-month period, over 1100 truck operators needed to get their trucks retrofit in order to continue operation at the Port of Oakland.

From start to finish, component ordering to having the finished product leave the door was realistically eight weeks. As demand increased for parts and labor closer to the deadline date, the lag time grew between submitting finished paperwork and receiving payment from the Air Quality District.

The deadline created strain in many areas; truck operators worried they would not be legal to enter the port by the deadline, installers had to manage cash flow through the long, bureaucratic process and the manufacturers were trying to manage delayed orders with impossible lead-times.

"As the December deadline approached, we were overwhelmed with orders," states Ian MacDonald, ECS V.P. of Sales and Marketing. "Since the economy was down in 2009, the entire supply chain was reducing their inventory and manpower. We had to work a lot of overtime, put a lot of pressure on our suppliers and manufacture the parts within a very tight timeframe."

In addition, the truck operators spoke Chinese, Vietnamese, Japanese, Spanish, Punjabi, Hindi, Polish, Russian, and more.

"At many times, the installation process was difficult because of the language barriers," states Wayne Cochrane, the local, Engine Control Systems Sales Manager. "The truck drivers involved spoke about thirty different languages, and it was a challenge to communicate."

SOLUTION

To make it as easy as possible for Port truck operators to take advantage of the state grant-money and meet the mandatory requirements by the deadline date, ECS distributors arranged to provide workshops at the local trucker-hangout, OT411, The West State Alliance.

Here, distributors met with truck drivers, explained the installation process and helped them fill out the appropriate paperwork. Truck operators had a data logger installed on their trucks to check heat samples.

Then, after driving for approximately one week, the truck operators brought their trucks back in to have the information downloaded into the computer, and the appropriate filter technology was selected at that time.

Provide a High-Quality Product

"CDTI's new ECS Purifilter® Plus was just verified by the regulatory programs at the beginning of the year, and it was a product very well-suited to these applications and met the program requirements for a Level 3 device, or one that reduces particulate matter ("PM" or "soot") by 85% or greater," states MacDonald.

Purifilter® Plus employs a passive, Purifilter® Diesel Particulate Filter (DPF) which was the first to attain an industry-leading 90% particulate emissions reduction value from the US EPA (see http://www.epa.gov/cleandiesel/verification/techlist-ecs.htm#ecs6).

It combines this technology with electrical heating elements that can be engaged when needed to perform thorough DPF regeneration – maximizing vehicle uptime across a variety of highway and urban, drive-cycle-applications.

Verified by CARB as a Level 3+ reduction technology, Purifilter® Plus gives fleet managers the ability to readily maintain optimum, vehicle performance and uptime while minimizing DPF maintenance. This system is ideal for centrally-located fleets and fleets where trucks have access to off-board, regeneration control panels.

Excel at Customer Service

To communicate with customers, the ECS distributors created driver display-cards in several different languages and walked customers through the process.

"We did everything we could do to help the truck operators understand what we were doing and make it easier to comply with regulatory requirements," states Steve Hoke, ECS Distributor. "Although it was difficult to communicate, price and quality had nothing to do with getting a lot of business during this project. In fact, much of it was word-of-mouth, and we picked up a large population of Chinese truck operators because they said we were so nice to work with."

As more truck operators got help from Hoke's team of distributors, the ECS installers created an effective process where at one point, they installed filters on approximately 15 trucks a day.

"We worked 20 hours a day and had about 200 data loggers," states Hoke. "It didn't matter. If the truck operator wanted their truck worked on during the night, we worked through the night."

The project was all about servicing the needs of the customers. If truck operators did not have their questions answered when the OT411 closed at 5:00 p.m., the ECS distributors and members of the Bay Area Quality District stayed overtime. They even provided dinner and beverages to the truck operators who were there late to get information.

"We learned a lot about many different people and cultures," states Hoke. "After about a month, the truck operators knew we were there every Tuesday. We didn't speak the same language, but one group of truck operators from Somalia stopped by every Tuesday and handed us a big bag of these small, orange-type fruits with a big smile. I guess in Somalia, these are a sign of friendship."

According to Hoke, one family even brought a home-cooked dinner for the installation team the night the filter was installed on their truck. This was much more than a maintenance issue as many of the families lived in the trucks. And this process was a way to keep their livelihood going in a way that they could afford. After all, if the truck operators did not have their trucks retrofit in time, they would need to buy a new truck, and this was completely impossible due to the cost.

"Even when you can't communicate via language, these people knew we were trying to help them" states Hoke. "It was incredible. We went down there to get a job done, but we did not know how much the truck operators would appreciate our personalized service. We went above and beyond what was necessary and ended up creating valuable, customer relationships that have lead to an enormous amount of ongoing business today."

RESULTS: CLEANER AIR AND ONGOING CUSTOMER RELATIONSHIPS

When orders came to a standstill due to the large demand for products and services by the December deadline, the Air Quality District realized that the timeframe was unrealistic. Because of this, late in December 2009, they extended the deadline date to February 2010. This gave the truck operators, installers and everyone involved the time necessary to retrofit the trucks.

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85% of Toxins Are Eliminated

After retrofitting approximately 600 trucks out of the 1100 that went through the program, ECS helped to reduce toxins in the air for the local community.

"Diesel particulate filters will eliminate up to 85 percent of toxic particulate emissions from Port trucks," stated Jack Broadbent, executive officer of the Air District in their press release about the project. "It provides an immediate health benefit to the West Oakland community by reducing health risks and ensures safer working conditions for hundreds of truck drivers."

And according to a University of California Berkeley study conducted in the Port of Oakland area in June 2010 after the completion of the project***, exhaust particulate matter/black carbon was reduced by approximately 50% and NO_x was reduced by approximately 40%. In addition, previous port-truck clean-up projects similar to this took about nine years to complete, not months.

More importantly, by focusing on helping the truck operators, and learning how to work with an international group of customers, ECS distributors created personal relationships while taking the majority of the retrofit business related to this project.

Win New Business with Customer Relationships

ECS distributors continue to have monthly, truck-operator workgroups to communicate directly with their customers. They ask questions to find out what is working and what isn't, get feedback and listen to suggestions. This way, CDTI learns from their distributors how to update their products and services to fit the needs of their customers and provide value as cost-effectively as possible.

About Clean Diesel Technologies, Inc.

Clean Diesel is a vertically integrated global manufacturer and distributor of emissions control systems and products, focused on the heavy duty diesel and light duty vehicle markets. Clean Diesel utilizes its proprietary patented Mixed Phase Catalyst (MPC®) technology, as well as its ARIS® selective catalytic reduction, Platinum Plus® fuel-borne catalyst, and other technologies to provide high-value sustainable solutions to reduce emissions and lower the carbon intensity of on- and off-road engine applications. Clean Diesel is headquartered in Ventura, California and currently has operations in the U.S., Canada, U.K., France, Japan and Sweden. For more information, please visit www.cdti.com.

Resources Quoted:

* Bay Area Quality Management District, http://hank.baaqmd.gov/CARE/index.htm and http://www.baaqmd.gov/~/media/Files/Communications%20and%20Outreach/Publications/News%20Releases/2009/port_090526.ashx?la=en

** www.baaqmd.gov/~/media/Files/Communications%20and%20Outreach/Publications/News%20Releases/2009/port_090728.ashx

*** University of California, Berkeley and Lawrence Berkeley National Laboratory Study http://weststatealliance.shuttlepod.org/Resources/Documents/CRC%20MSAT%20Port%20Trucks%20(3).pdf