

THYSSENKRUPP ELEVATOR

The Numbers

\$1.91 savings

per gallon cost for propane autogas.

\$4,152 savings

per vehicle, per year in fuel cost.

6,917 pounds

of carbon dioxide eliminated per vehicle per year from ThyssenKrupp Elevator's carbon footprint, based on their average 25,000-mile-per-year usage.

373,518 pounds

of carbon dioxide eliminated annually from ThyssenKrupp Elevator's total carbon footprint.

The Challenge

To operate 10 percent of its fleet (or 300 vehicles) on propane autogas by 2015.

The Vehicles

Dedicated liquid propane autogas vehicles in ThyssenKrupp Elevator's fleet.



Ford E-150
250 cargo vans



Ford F-150
250 trucks

54

number of propane autogas vehicles added to the fleet since Q4 2012

“When we laid out all the fuels available, including propane autogas, ethanol, biodiesel, compressed natural gas and electric, there was only one alternative fuel source that had a check mark in all five categories, and that was **propane autogas**. ”

— Tom Armstrong,
director of fleet at ThyssenKrupp Elevator

ThyssenKrupp Elevator,

the largest producer of elevators in the Americas, set the goal to reduce its carbon footprint by 20 percent by 2015, with a 12 percent improvement in fuel efficiency. By 2012, they had already met this goal — with propane autogas.

When ThyssenKrupp started the process in 2010, “We were determined to reduce our fuel consumption and find sustainable vehicles that worked for us,” said Tom Armstrong, director of fleet at ThyssenKrupp Elevator. “We needed a tool to effectively analyze and justify each fuel and vehicle type.”

Armstrong’s “Five C’s” now serves as a model for other companies seeking to make the switch.

- Is it clean?
- Does it conserve?
- Is it cost-effective?
- Does it make common sense?
- Can you commit?

According to Armstrong, propane autogas was the only product that qualified.

Propane autogas is clean, emitting up to 25 percent less greenhouse gas, 20 percent less nitrogen oxide and up to 60 percent less carbon monoxide when compared to gasoline. These benefits have enabled all ROUSH CleanTech vehicles to meet Environmental Protection Agency and California Air Resources Board certifications.

For each propane autogas van used in their Phoenix market, ThyssenKrupp reduces its carbon footprint by 6,917 pounds of carbon dioxide annually.

From well to wheel, propane autogas conserves natural resources. It’s a domestically produced byproduct of natural gas processing and petroleum refining. ThyssenKrupp displaces about 2,000 gallons of gasoline per vehicle annually by utilizing safe, non-toxic propane autogas.

While gasoline’s average price hovers around \$3.84 per gallon (July 2012), ThyssenKrupp’s price for propane autogas averages \$1.93 per gallon. This cost effectiveness means a \$225,000 fuel savings in their Phoenix market alone. The vehicles also incur lower maintenance costs due to significantly less carbon build-up.

“The return on investment varies by city, based on variables like state incentives, fuel costs reduction, high

occupancy vehicle access and registration costs,” said Armstrong. “With an estimated six-year vehicle life, we have two to four years of positive return on each vehicle investment.”

With so many pluses, common sense pointed ThyssenKrupp to commit to propane autogas.

“Our next challenge was identifying a quality tier-one supplier committed to our long-term sustainable goals,” said Armstrong. “ROUSH CleanTech surfaced as our best solution and business partner.”

“We are challenged in today’s marketplace to go green”

— Tom Armstrong

Offered through authorized Ford dealerships around the country, ROUSH CleanTech propane autogas fuel systems deliver the same factory Ford performance characteristics and serviceability with a 5-year / 60,000-mile limited warranty.

For refueling, propane distributor Ferrellgas upgraded six stations throughout Phoenix to be 24-hour accessible and driver-operated. With thousands of public propane autogas refueling stations across the nation, ThyssenKrupp’s other markets for propane autogas vehicles are based near areas that already have or are improving refueling infrastructure. In addition to using public sites, ThyssenKrupp has private refueling infrastructure at their Detroit branch.

Today, ThyssenKrupp runs 47 ROUSH CleanTech Ford E-series vans and seven F-series trucks across four markets: Phoenix, Seattle, Los Angeles, San Diego and Detroit. They are targeting Dallas, Houston, Sacramento and San Francisco next.

“We couldn’t be more pleased with how propane autogas is performing for us,” said Armstrong.



ThyssenKrupp Elevator Americas