

# Fuel Economy Savings Study

Test Results on 42 New Freightliner  
Trucks Powered by Detroit Series 60 Engines

Test Conducted Over 12.7 Million Miles

**Data Accumulated By  
Actual Truck Fleet**

in Salt Lake City, Utah  
Name withheld at request of Actual Truck Fleet

**Purpose of Testing**

To Track Fuel Economy With And Without The  
Rentar Fuel Catalyst

**Type of Testing**

Ten – 2007 new Freightliner tractors with Detroit Series 60 engines compared to thirty two new Freight liner tractors with Detroit Series 60 engines as control vehicles. Company name withheld as a result of confidentiality agreement.

**Date of Testing**

Third quarter of 2006

## Summary of Findings

Actual Truck Fleet conducted fuel economy studies. They solely managed and collected the data. The results are reported below.

In Salt Lake City, Utah at the Actual Truck Fleet truck facility, managed a fuel economy test procedure using ten Class 8 Tractors as test vehicles and thirty two Class 8 tractors as control vehicles. All were new tractors with no miles on them thus there was no baseline to start with. The premise was to test the ten Rentar installed tractors against the thirty two control tractors. The results, as documented in the attached report were a **4.4% average improvement in fuel consumption** on the ten tractors with the Rentar Fuel Catalyst installed over the thirty two control tractors.

- Based on Actual Truck Fleet procedure and protocol for all testing of this type, they insert other factors to meet their comfort level. Therefore their results which were 2.43% average improvement in fuel consumption will be represented in this report as well.

### Effect On A Fleet Of 1000 Trucks

The effect of using the Rentar Fuel Catalyst on the Actual Truck Fleet based on each vehicle averaging 120,000 miles per year and purchasing fuel at an average of \$2.926 per gallon would be a fuel cost reduction of \$2569 per truck or \$2,569,000 per 1000 trucks annually. Under the Actual Truck Fleet concept the cost reduction would be \$1419 or \$1,419,000 per 1000 trucks annually.

### Return On Investment

The return on investment (ROI) or repayment of the cost of the catalyst would be approximately 6.3 months. Under the Actual Truck Fleet concept 11.4 months.

### Greenhouse Gas CO2 Emissions

In addition to saving 878,100 gallons of fuel per year, C.R. England would not be emitting 8,780 metric tons of CO2 greenhouse gas into the atmosphere. Under the Actual Truck Fleet concept saving 484,900 gallons of fuel per year would not be emitting 4849 metric tons of CO2 greenhouse gas into the atmosphere. This number is based on an EPA standard which states that for every 100 gallons of diesel fuel burned equates to 1 metric ton of CO2 released into the atmosphere.

## **Being A Green Company**

Being a "green company" has its own inherent value in protecting the environment and the health of its employees and clients. A positive public image is created by being "Green".

## **Monetary Value Of Reducing CO2 Greenhouse Gases**

The 8,240/4849 metric tons of CO2 not being emitted will have a monetary value that could become an additional income stream for Actual Truck Fleet. This would be the result of the upcoming cap & trade programs currently being adapted in the United States similar to the cap & trade programs in effect in 162 countries under the Kyoto Treaty.

## **Test Protocol**

### **Salt Lake City, Utah - Controlled Comparison Testing**

Actual Truck Fleet selected **forty two similar** trucks with Detroit Diesel engines. All trucks were brand new having never been on the road prior to the test.

Beginning and ending odometer readings were taken by Actual Truck Fleet personnel. They also supplied the fuel usage for each truck throughout the test. **All fuel used was the Ultra Low Sulfur fuel as required by U.S. regulations.** Fuel usage was acquired from Actual Truck Fleet's official fuel billing records, provided by Actual Truck Fleet to ensure accuracy.

The forty two trucks were driven over similar routes and in similar weather conditions throughout the duration of the fuel economy study. Testing started in 2006 and included ten Rentar-equipped trucks and thirty two control trucks. Rentar Fuel Catalysts were installed on ten of the new vehicles from factory by Actual Truck Fleet and supervised by Rentar staff. The test lasted over the entire lifecycle of the 42 trucks in Actual Truck Fleet **covering 12,703,840 miles**

**Fuel savings highlights:**

**Current fuel usage:**  $\frac{120,000 \text{ miles/yr/truck}}{6.013 \text{ miles per gallon}}$   
= 19,957 gallon x \$2.926/gal = 58,394/truck/yr  
= \$58,394,000 / yr for 1,000 trucks

**Annual Fuel savings with Rentar:** (1,000 trucks)  
\$58,394,000 x 4.4% mileage improvement =  
**\$2,569,336 per year fuel cost reduction**

**Fuel savings highlights under Actual Truck Fleet concept:**

**Current fuel usage:**  $\frac{120,000 \text{ miles/yr/truck}}{6.013 \text{ miles per gallon}}$   
= 19,957 gallon x \$2.926/gal = 58,394/truck/yr  
= \$58,394,000 / yr for 1,000 trucks

**Annual Fuel savings with Rentar:** (1,000 trucks)  
\$58,394,000 x 2.43% mileage improvement =  
**\$1,418,962 per year fuel cost reduction**

\*including 5% inflation/year

**Current Actual Truck Fleet Cost of Fuel and Estimated Savings through use of the Rentar Fuel Catalyst**

Basis of Data:

- 1) How many miles per truck per year ? 120,000
- 2) What is the Mpg? 6.01
- 3) What is the percentage of savings? 4.4%
- 4) What price per gallon? \$2.93
- 5) What average % fuel price increase? 5%
- 6) How many trucks? 1,000

	Gross Annual Fuel Cost	Gross Fuel Savings	Accumulated Fuel Savings	Avg. Monthly Savings
Year 1	\$58,393,481	\$2,569,313	\$2,569,313	\$214,109
Year 2	\$61,313,155	\$2,697,779	\$5,267,092	\$224,056
Year 3	\$64,378,813	\$2,832,668	\$8,099,760	\$236,056
Year 4	\$67,597,753	\$2,974,301	\$11,074,061	\$247,858
Year 5	\$70,977,641	\$3,123,016	\$14,197,077	\$280,251

**Current Actual Truck Fleet Concept Cost of Fuel and Estimated Savings through use of the Rentar Fuel Catalyst**

Basis of Data:

- 1) How many miles per truck per year ? 120,000
- 2) What is the Mpg? 6.01
- 3) What is the percentage of savings? 2.4%
- 4) What price per gallon? \$2.93
- 5) What average % fuel price increase? 5%
- 6) How many trucks? 1,000

	Gross Annual Fuel Cost	Gross Fuel Savings	Accumulated Fuel Savings	Avg. Monthly Savings
Year 1	\$58,502,496	\$1,404,060	\$1,404,060	\$117,005
Year 2	\$61,427,621	\$1,474,263	\$2,878,323	\$122,855
Year 3	\$64,499,002	\$1,547,976	\$4,426,299	\$128,998
Year 4	\$67,723,952	\$1,625,375	\$6,051,674	\$135,448
Year 5	\$71,110,149	\$1,706,644	\$7,758,317	\$142,220

# Cumulative Quarterly MPG's

Quarter	3Q06	4Q06	1Q07	2Q07	3Q07	4Q07	1Q08	2Q08	3Q08	4Q08	1Q09	2Q09
Rentar	6.00	6.00	6.02	6.07	6.14	6.14	6.05	6.07	6.08	6.10	6.14	6.18
Control	6.04	6.06	6.01	6.04	6.01	6.03	5.93	5.94	5.93	5.95	5.96	6.00
% Savings	-0.7%	-0.9%	0.2%	0.5%	2.1%	1.9%	2.0%	2.2%	2.6%	2.4%	2.9%	2.9%

