

**Downs Equipment Rentals, Inc.**  
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MAY 24 2007

May 19, 2007

To all CARB Board members,

Enclosed please find our analysis of the cost of compliance to the In-use Off-road Diesel Vehicle Rule for (DER) Downs Equipment Rentals, Inc. DER has a fleet with 44,819 horsepower (HP).

The Rule clearly states on page 3 that the cost of compliance could be as high as \$170 per HP per year over the life of the 21 year Rule. It says on page 3 and 4 that the expected cost for a 3,000 HP fleet to comply will be about \$27,000 per year. That calculates to be:

$\$170 / 21 = \$8.10$  per HP per year x 44,819 HP = **\$363,033.90 a year for DER to comply.**

Using the CARB formula based on the CARB 3,000 HP example for the DER fleet it would cost  $44,819 \text{ HP} / 3,000 \text{ HP} = 14.93$  x \$27,000 per year = **\$403,371 a year for DER to comply.**

Our analysis based on actual cost quotes from the Caterpillar Dealer to repower our equipment to Tier 3 engines and to add VDECS to the exhaust systems will cost from approximately **\$45.00 to \$55.00 per HP per year.** The following costs have been verified by the CARB staff.

**$\$45.00 \times 44,819 \text{ HP} = \$2,016,855$  per year to comply.**


**$\$55.00 \times 44,819 \text{ HP} = \$2,465,045$  per year to comply.**

DER wants to work with CARB to clean up our air and will do our part. Our company may possibly be able to absorb an additional overhead of \$8.10 per year per HP. (\$363,933.00) It would be impossible to absorb or add on an additional overhead cost of \$45.00 to \$55.00 per HP per year and stay in business as the CARB staff suggests on page 4. Our actual operating loss would be \$1 million to \$1.5 million dollars a year under this Rule.

The Rule is long and complex. Most of us do not know what to do. The Rule is based on Tier 4 technology and the Tier 4 engines will not be available until 2014. We cannot afford to repower now and then again after 2014.

We must have a public funding mechanism such as Carl Moyers to fund at least 80% of the cost of compliance and a 5 year delay to give time for technology to meet the requirements of the Rule.

Respectfully,

  
Gordon Downs  
President/Owner – DER, Inc.



**Downs Equipment Rentals, Inc.**

May 16, 2007

CARB costs as per pg. 3

CARB is underestimating the cost for equipment owners to comply with the Rule. The difference in the CARB estimated cost of compliance and the actual cost of compliance originates through the CARB assumed natural annual turnover rate (3.9%) and the actual turnover rate (1.0% to 0.0%) of an owner's fleet.

The Rule states on page 3 in Illustration C:

*"For a typical fleet, total costs over the life of the regulation are expected to be \$104 to \$117 per horsepower of affected vehicles in 2006 dollars. Individual fleets may incur average costs anywhere from \$0 to about \$170 per horsepower (HP), depending on their initial composition and vehicle age. There may be cases where fleets would incur slightly higher costs. Annual costs for a typical fleet would range from \$8 to \$9 per horsepower per year in 2006 dollars."*

The life of the regulation is 2009 to 2030 or 21 years.

Assuming total costs of \$170 per HP over the life of the regulation the cost would be:  
 $\$170 / 21 = \$ 8.10$  per HP per year.

In applying the highest annual cost to the fleet of Downs Equipment Rentals (DER) the CARB estimated cost should be:

$44,513 \text{ HP} \times \$9.00$  (cost per HP per year for 21 years) = **\$400,617.00 per year**

The actual spread sheet cost, using the most cost effective method of compliance for DER., provided by CARB staff members Elizabeth Yura and Jeff Wilson over 12 years is:

$\$24,506,765 / 12 = \$2,042,230$  per year /  $44,513 \text{ HP} = \$45.88$  per HP per year for 12 years.

Our own cost estimates, based on actual quotes from the Caterpillar Dealer, each year for the first 5 years is:

Repower: 44,513 HP x 8% x \$328 per HP	= \$ 1,168,021
VDECS : 44,513 HP x 20% x \$146 per HP	= <u>\$ 1,299,779</u>
Total:	= <b>\$ 2,467,800</b> cost per year/ 44,513 HP
	= <b>\$ 55.43</b> per HP per year.

This cost was verified by Kim Heroy-Rogalski, CARB Lead Person, on April 18, 2007.

Gordon Downs – President  
Downs Equipment Rentals, Inc.

C

collection vehicles; and the portable engine ATCM covers about 33,000 portable engines (ARB, 2005a; ARB, 2006; ARB, 2004). Likewise, the benefits of the proposed regulation are dozens of times larger than those of previous measures. In total, the proposed regulation is expected to reduce 187,000 tons of NOx emissions and 33,000 tons of PM emissions between 2009 and 2030.

The regulation would provide greatly needed reductions of NOx emissions in the South Coast and San Joaquin Valley air basins. These areas must achieve significant NOx reductions from the off-road sector to achieve ambient ozone and fine particulate matter (PM2.5) standards by the federally-mandated deadlines. The deadline for the attainment of the PM2.5 standards in these regions is currently 2015, so emission reductions are urgently needed. Staff expects that despite a comprehensive effort to meet the PM2.5 standard, California may still come up short in achieving the needed emission reductions by the 2015 federal attainment deadline. Because the standard is an annual average, the U.S. EPA requires that all necessary emission reductions be achieved one calendar year sooner, or by 2014. While all sources of NOx emissions are important, off-road diesel vehicles are one of four major categories that will determine whether California is able to meet the 2014 deadline for PM2.5 attainment in the South Coast Air Basin. If the emissions reductions needed to achieve attainment of the federal standards cannot be demonstrated, the Board may need to consider additional measures or changes. However, staff believes the proposed regulation represents the economic limit of what industry could bear, and any further emissions reduction requirements would likely require financial incentives.

The regulation is controversial among the fleets it would impact in large part because it would impose significant costs on industry. The total cost of the regulation is expected to be between \$3.0 and \$3.4 billion in 2006 expenditure equivalent dollars (2006 dollars). This cost would be spread over the years 2009 to 2030, with the majority of costs occurring between 2010 and 2021. On average over the course of the regulation, the cost would vary between \$229 million and \$257 million per year, averaging \$243 million per year (2006 dollars). About half the cost is expected to be incurred directly by the construction industry, nearly 15 percent by the business services sector, and about 10 percent by the mining industry. Government fleets are expected to incur about 5 percent of the total cost, with the remaining costs spread among various other affected industries.

Costs to individual fleets would vary depending on the size of each fleet, its initial vehicle composition and vehicle age, and its normal purchasing practices. Costs also would vary depending on the compliance strategy chosen by each fleet (retrofit, repower, buy new, and/or buy used). For a typical fleet, total costs over the life of the regulation are expected to be \$104 to \$117 per horsepower of affected vehicles (in 2006 dollars).

21 yrs.

[REDACTED]

For a typical medium sized fleet with total fleet horsepower of 3,000, the total cost of the regulation is

$$117 \times 44,500 = 5,206,500$$

$$\frac{170}{21} = 8,109 \times 44,500 = 360,238$$

expected to be about \$333,000 (in 2006 dollars), with average annual costs of \$27,000 per year (in 2006 dollars) for 21 years.

Overall, most affected businesses could absorb the costs of the proposed regulation with no significant adverse impacts on their profitability. Manufacturing businesses are the least likely to be able to pass on their cost if the product they manufacture is sold nationally or globally, but the economic impact of the regulation is not expected to be a significant part of normal operating expenses. However, most construction fleets, rental companies, airlines, and landscaping service fleets who compete locally should be able to pass on some or all of the costs of compliance to their customers, thereby maintaining their profitability. Even if fleets were unable to pass on any of the cost of compliance to their customers, staff found that between about 60 and 80 percent of fleets would still be expected to be able to withstand the cost of the regulation without incurring more than a 10 percent change in their return on equity. Small fleets would be more likely to be able to absorb the cost of the regulation without exceeding 10 percent change in "return on owner's equity" (ROE) because they are not subject to the regulation's mandatory turnover provisions, and thereby would incur significantly less costs relative to medium and large fleets. The 20 to 40 percent of fleets for which the regulatory costs exceed a 10 percent change in ROE would have to pass through at least some of the costs to their customers to maintain their profitability.

The regulation is expected to raise the cost of construction in California by no more than 0.3 percent as fleets pass on the cost of compliance to their customers. Customers that could expect to pay higher construction costs include developers, home builders, and government agencies sponsoring road construction and other transportation projects. For the average new home buyer, the expected cost of the regulation could add about \$5 per month to a 30-year mortgage.

The regulation would require fleets to change their operating and vehicle purchasing practices. For the first time, owners of off-road vehicles would need to label them and report them to the State. The regulation would require upgrades with newer engines or turnover of vehicles that fleets purchased years ago, and which they had assumed could be used indefinitely. The regulation would require use of retrofit devices that, while verified by the ARB, are unfamiliar to fleets.

The regulation contains flexibility provisions to allow each fleet to find its own most cost-effective way to comply. The regulation would allow fleets to comply by meeting a fleet average so each fleet can choose its own best, most cost-effective path toward compliance. The regulation contains special exemptions for low-use vehicles, specialty vehicles, emergency vehicles, and dedicated snow removal vehicles. The regulation contains provisions that would give fleets more time if they encounter delays in obtaining the engines, vehicles, or retrofits that they need to comply. Finally, the regulation gives the smallest fleets more time to comply, leaving them several years to apply for State incentive funding.

Staff has made an enormous effort to notify affected fleets and interested parties about the proposed regulation, and to solicit their input on the regulation. The latest seven

Elizabeth Yura -  
Jeff Wilson

44,513 HP  
4% Turnover  
1780 HP  
190 are  $\approx$  9 machines

TOTAL COST  
OF COMPLIANCE  
PER YEAR

Fleet horsepower: 44,513

Assuming a natural turnover of 3.9 %

Fleet average age: 12.9 years-old

Assuming turnover to newer vehicles only, no repowers assumed

\* 20,247ea  
10%

CY	NOxTarget	NOxAverage	% Turnover	PMTarget	PMAverage	PCTRetrofit	TurnoverCost	Full TurnoverCost	RetrofitCost	AnnualCost	FullAnnualCost
2009		7.86	4.0		0.48	0.00	\$ -	\$ 933,681	\$ -	\$ -	\$ 933,681
2010	6.21	6.78	7.9	0.26	0.36	20.24	\$ 28,083	\$ 2,043,777	\$ 936,000	\$ 964,083	\$ 2,979,777
2011	5.81	5.67	8.6	0.26	0.26	20.04	\$ 220,991	\$ 2,306,155	\$ 1,206,000	\$ 1,426,991	\$ 3,512,155
2012	5.34	4.98	4.7	0.20	0.20	19.86	\$ 183,202	\$ 1,418,760	\$ 1,062,000	\$ 1,245,202	\$ 2,480,760
2013	4.94	4.93	0.7	0.20	0.19	0.00	\$ 11,982	\$ 127,800	\$ -	\$ 11,982	\$ 127,800
2014	4.54	4.36	5.6	0.14	0.14	15.05	\$ 247,446	\$ 1,464,017	\$ 930,000	\$ 1,177,446	\$ 2,394,017
2015	4.14	4.11	2.7	0.14	0.12	0.00	\$ 188,249	\$ 859,391	\$ -	\$ 188,249	\$ 859,391
2016	3.66	3.57	5.7	0.10	0.10	2.16	\$ 244,154	\$ 2,103,415	\$ 144,000	\$ 388,154	\$ 2,247,415
2017	3.26	3.24	4.3	0.10	0.09	0.00	\$ 244,474	\$ 1,399,419	\$ -	\$ 244,474	\$ 1,399,419
2018	2.86	2.84	6.6	0.07	0.07	2.00	\$ 267,943	\$ 2,248,984	\$ 132,000	\$ 399,943	\$ 2,380,984
2019	2.42	2.41	6.5	0.07	0.04	0.00	\$ 170,476	\$ 1,692,598	\$ -	\$ 170,476	\$ 1,692,598
2020	2.03	2.04	9.5	0.04	0.03	0.00	\$ 40,064	\$ 3,071,513	\$ -	\$ 40,064	\$ 3,071,513
2021	2.03	2.00	0.9	0.00	0.03	4.18	\$ 18,036	\$ 279,255	\$ 148,000	\$ 166,036	\$ 427,255
							\$ 1,865,100	\$ 19,948,765	Total Cost:	\$ 6,423,100	\$ 24,506,765

12 yrs

$$B + C = E$$

$$A + C = D$$

$$\frac{\$ 24,506,765}{12} = \$ 2,042,230/\text{yr}$$

$$\frac{\$ 2,042,230}{44,513} = \$ 45.88/\text{HP}/\text{YR}$$

$$\$ 45.88 \times 21 = \underline{\underline{\$ 963.46 \text{ over 21}}}$$

< 1%