



## OPE Update

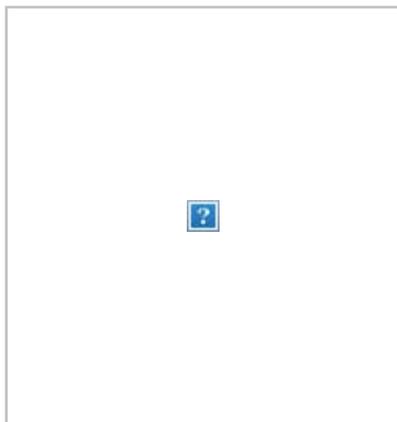
April 2014

### Light-Duty Engine Delivers 30% Fuel Economy Improvement

The results are in. When benchmarked against a next-generation diesel equipped with the most advanced technologies, the Achates Power opposed-piston, light-duty diesel engine demonstrates:

- 30% better fuel economy
- The potential to meet stringent Tier 3/LEV III emissions and 2025 CAFE
- All without expensive hybridization or vehicle improvements

These game-changing performance and emissions results--already exhibited for medium- and heavy-duty applications--were the focus of recent presentations at the [SAE High Efficiency IC Engine Symposium](#) and [SAE World Congress](#).



More than 30 speed and load points were measured on Achates Power's prototype engine to provide the benchmark comparison. In addition to demonstrating significant fuel economy advantages, the Achates Power engine showed extremely low engine-out emissions--reinforcing its potential to meet the upcoming fully phased-in

Tier 3/LEV III standards. The engine also showed vibration forces and moments that were significantly lower than those of conventional, four-stroke gasoline V6 engines.

#### IN THIS ISSUE

- \* [Light-Duty Engine Delivers 30% Fuel Economy Improvement](#)
- \* [Revolutionizing Vehicle Transportation](#)
- \* [Are Diesels Cleaner than Gasoline Engines?](#)
- \* [In the News](#)
- \* [Upcoming Events](#)

#### FOLLOW US





*The Achatas Power engine's brake-specific fuel consumption (BSFC) map shows that its high efficiency also extends to low loads.*

For an overview of the research study, click [here](#). You can also [purchase](#) the SAE paper or read the blog post (see below).

## "Under the Hood"

### Revolutionizing Vehicle Transportation



*By Fabien Redon  
Vice President, Technology Development  
Achatas Power, Inc.*

Last week, I had the privilege of presenting our light-duty diesel engine's latest performance and emissions results at the [SAE High Efficiency IC Engine Symposium](#) and [SAE World Congress](#). It's always an honor to share our work with automotive executives, analysts, academics and engineers. And, it's even more meaningful when those same individuals realize the potential our engine has to revolutionize passenger and commercial vehicle transportation. [Read more.](#)

## "Under the Hood"

### Are Diesels Cleaner than Gasoline Engines?



*By Roland Martin  
Business Development Director  
Achatas Power, Inc.*

The conventional tradeoff between spark-ignited gasoline engines

and compression-ignition diesel engines is that diesels are significantly more efficient--on the order of 30%. One reason for this is that diesel fuel is more energy dense (by volume). And more energy density translates into better fuel economy. Despite the added efficiency benefit, diesels are also more expensive due to:

- **Combustion:** Diesel combustion results in greater pressures, requiring sturdier construction (which also contributes to the engines' generally superior longevity).
- **Advanced Technologies:** Diesel engines have employed more advanced technologies to improve efficiency and emissions, including high pressure direct fuel injection and turbochargers.
- **Aftertreatment:** Diesel engines often require more expensive aftertreatment to meet tailpipe limits as compared to gasoline engines.

This historical tradeoff, however, is beginning to change. [Read more.](#)

## In the News

- [Achatas: LD Opposed-Piston, 2-Stroke Diesel Can Meet 2025 Final CAFE, Tier 3 Standards for Full-Size Pickup: 30% Better FE than Cummins ATLAS](#)  
(Green Car Congress)
- [San Diego Tech Innovations in the Spotlight](#)  
(UT San Diego)
- [Achatas Finding Traction with Opposed-Piston Engine](#)  
(WardsAuto.com)
- [CONNECT Honors Roth, Highlights Product Innovation in San Diego](#)  
(Xconomy)

## Upcoming Events

- [FISITA 2014 World Automotive Congress](#)  
June 4, 2014 at 10:30 a.m. (CET5 Session)  
Maastricht, the Netherlands  
**Presentation:** Modernizing the Opposed-Piston Engine for Clean, More Fuel Efficient Transportation