Clean Diesel:
The Progress
The Message
The Opportunity

Allen Schaeffer
Executive Director
Overview

- **The Progress**: where are we from a Technology, Policy perspective?

- **The Message**: what is the credible message of diesel yesterday, today and tomorrow?

- **The Opportunity**: where does diesel fit in the future and how to get it there.
Key Factors influencing the Image, Policies and Future of Diesel Technology
### Key Influences for Diesel Future

- **It's new, clean, real:** 2007 Cleaner Fuel and heavy-duty trucks --availability, price, supply, performance
- **The BIG Policy Dance:** Climate Change, Fuel Economy, Emissions – *can diesel deliver it all?*
- **Renewable Fuels** -- everyone's talking home grown fuel, looking beyond basic bio, cost, quality, timing, -- new and unknown
- **Addressing the Old:** Legacy Products
  - Chasing the money – DERA & CMAQ, Policy approaches coming on – California mandate vs. voluntary;
  - **BIG Diesels Ports, Trains** – unique, playing catch up, negative media + progressive policies
- **Light Duty Diesel** -- Tier 2 Bin 5, 50 state -- can do; real product announcements + some wishy-washiness
  - Media and Public Perception: can they embrace diesel?
- **California** -- has it all: Greenhouse gases, Low Carbon Fuels Std, 50 state diesel? Technology neutral, right?
The Progress
Clean Diesel Technology

- 2007 has arrived
- Ultra-low sulfur diesel fuel is here... without a hitch
- 2007 emissions level heavy-duty engines are selling... and here's what people are saying

Image, Story Courtesy of Diesel Progress
Washington Policymakers Have Seen the New Diesel and it is Clean!
The Progress:
What truckers have to say about 2007 Trucks

• “Our drivers think they’re performing outstanding. There’s plenty of power and we haven’t had any issues whatsoever.”

It’s going really good. I will say knowing what we know now about the 2007 engines, I wouldn’t be afraid to buy one or two or three.” Had we known two years ago what we do today.. We would not have planned our purchasing around the introduction of the new engines. We would have followed normal purchasing schedule instead of pre-buying.”

(Duplainville Transport, Sussex, WI)

• “Their power is very good and their reliability is excellent. We like them so much that we first ordered 10 more but have since upped that for 70 in all.”

(Halvor Lines, Superior, WI)

• The exhaust pipe inside looks brand new like the day I bought it.

(Kerstetter Trucking; Reedsville PA)
Bring on the Diesels cars, trucks and SUVs
A Brief History Of Light Duty Diesel:
2000-present:

• 2000-2004
  – Selling Hope,.... the promise of what could be, you can’t have it here.... European envy...Keep the diesel option open

• 2005
  – Feeling Hope – President’s Tax Credit; new products – E320 CDI, Jeep Liberty

• 2006
  – Full of Hope – ULSD here, more announcements! GM, Cummins, Honda, Daimler, Chrysler

• 2007
  – Cup of Hope runneth over – Cummins/Dodge Ram rolls out, Nissan, Hyundai, GM*
Current Light Duty Diesel Share

- 70%: Growth in diesel trucks and SUVs registered 2000-2006
- 78%: Growth in light duty diesel vehicles registered 2000-2006
- 43% choosing diesel option 2000-2006
- 3.6% of overall vehicles

Diesel Registrations in US

Source: R.L. Polk and Company for the Diesel Technology Forum
What do American Consumers think about Diesel, Fuel Prices, etc?

This Mercedes Benz – Diesel Technology Forum report presents the findings of a telephone survey conducted among a national probability sample of 1,023 adults comprising 508 men and 515 women 18 years of age and older, living in private households in the continental United States.
Consumer Awareness on Diesel: Good News and Bad News

• Good news:
  – More than three-fourths of Americans are aware that diesel-powered cars are available in the U.S. (79%). *(MORE THAN we expected)*
  – Many Americans (71%) agree that “diesel-powered cars are harder to find than gas-powered cars”. *(TRUE – not many models – and they’re looking!)*
  – Other statements people agree with are that “diesel-powered cars are more environmentally-friendly than gas-powered cars” (41%), “diesel-powered cars are more fuel-efficient than gas-powered cars (64%)

• Bad News: Overcoming old perceptions – still work to be done:
  – The second most agreed with statement is that “diesel-powered cars are noisier than gas-powered cars” (67%), “diesel fuel is expensive” (both 64%), and “diesel fuel is only for trucks” (20%).
  – Sixty-one percent agree that “diesel-powered cars are smellier than gas-powered cars.”
• Over two-thirds (70%) of the population disagree with the statement “Americans as a whole are doing enough to help reduce fuel consumption,” while 29% agree with it.

• Six out of ten Americans (60%) know that cars can use diesel fuel.

• About four out of ten people (41%) say that it is likely they will consider buying or leasing a diesel-powered car, while 58% say it is unlikely they would consider such a purchase.

  – The youngest age category, Generation Y, is the most likely to consider buying or leasing a diesel-powered car (50%). This number slightly declines with Generation X (46%) and Baby Boomers (40%), but significantly drops as only 27% of those over 60 would consider a diesel-powered car.

Why we can and should forget about bringing up the diesels of the 1980’s.
Diesel and Hybrid Registrations
2000-2006

Source: R.L. Polk and Company for the Diesel Technology Forum
Consumer Clean Diesel
Choices are Growing

- Chrysler: Jeep Grand Cherokee
- Dodge: Ram 2500/3500 Blue Tec – Cummins engine
- Ford: F-250 Powerstroke / International
- GM / Chevy/GMC -- Duramax
- Mercedes
  - E320 Blue Tec; R320 CDI
  - GL 320 CDI; ML 320 CDI
- VW: Touareg TDI; 2006 Jetta TDI

HERE NOW

- BMW – diesel by 2009
- Chrysler– Cummins- LT diesel (Dodge 1500)
- Mercedes E320 CDI, GL & ML SUV lineup
- GM -- LT engine (announced 2006)
- Honda: by 2010 (Accord Pilot, Odyssey, Ridgeline?)
- Nissan: Maxima
- VW: Jetta TDI -- 50 state (2008)

COMING SOON
How is the Media portraying Diesel Technology?
Discussion of Fuels and Technologies takes many forms

“You told me to change all of our computers to DSL. I thought that was short for ‘diesel’.”
Sharing the Spotlight:
Clean Diesel & Hybrids
Question: Have Perceptions changed regarding the image of diesel?

- Recognized more as Clean Diesel than Dirty Diesel
- Favorable positioning relative to other clean or alternative fuels or technologies
Meet Clean Diesel

What's Under The Hood? Automakers Have New Clean-Diesel Engines On Tap
-October 3, 2006

The Detroit News
“Hybrids have been getting the buzz, but with the kind of long-distance highway driving common for most Americans, diesel might be better...”
- Jeff Plungis

Associated Press
Cleaner Fuel To Spur Diesel Auto Revival
-October 13, 2006

Associated Press
Diesel Registrations Up 80% in Last 5 Years
April 26, 2006

The New York Times
Diesel a Savior in Squeeze On Energy? Obstacles Exist
By MATTHEW L. WALD
Savings From Diesel

Coming to a pump near you: clean diesel
Meet Clean Diesel

Motorists gear up for switch to clean-burn diesel fuel

Less noise, smell and soot may help convert sceptical car drivers Bernard Simon reports

The drive to convert American motorists to diesel will not be easy. But consumers are becoming more aware of the environmental benefits of diesel.

Unlike gasoline, which is made from petroleum, diesel is made from a mixture of natural gas and coal. It burns hotter and cleaner than gasoline, reducing emissions of pollutants and greenhouse gases.

However, the switch to diesel has been slow due to the perception that diesel engines are louder and smellier than gasoline engines. In addition, many people associate diesel with pollution and soot, which can be a concern for some consumers.

But with the increasing need for cleaner transportation and the growing concern about climate change, diesel is becoming a more viable option. Manufacturers are investing in technology to improve the efficiency and cleanliness of diesel engines, making them a more attractive option for drivers.

In this article, we will explore the benefits of diesel and the steps being taken to make it a more environmentally friendly option for consumers.
Light Duty Clean Diesel Gaining Coverage

**Detroit Free Press**

“Diesel engines, once a sooty scourge of American roads, may be poised for popularity in the United States starting as soon as this year.”

-Justin Hyde

**WALL STREET JOURNAL**

Diesel power is about to get its best shot in at least 20 years in the U.S. car and light truck market.

- May 8, 2006
Meet Clean Diesel
Getting the Word Out

Radio and TV Broadcast Coverage

• 45 Million Viewers

CBS Radio
Updated News 24 Hours a Day

CNN Radio

npr
USA Mindshare: Diesel Topics

USA Mindshare: July 07

- Light-Duty: 8%
- Off-Road: 7%
- Port and Marine: 6%
- Power Generation: 0%
- DTF News: 4%
- Legislative: 15%
- Truck and Bus: 15%
- Industry and Trade: 11%
- Alternative Fuel and Biodiesel: 8%
- Emissions and Environment: 26%
Overall USA diesel coverage is consistently positive – neutral
Top diesel messages in the US:

![Graph showing USA Messages from May-06 to Apr-07 with two lines representing fuel economy/efficiency and emissions/environmental progress.](image-url)
Growing the Brand: “CLEAN DIESEL”

"Clean Diesel" Mentions in Nexis Database
2000-2007 YTD

- 2000: 375
- 2001: 372
- 2002: 601
- 2003: 721
- 2004: 817
- 2005: 1,577
- 2006: 2,489
- 2007: 2,047

7 mos
Future Considerations

What are the Key Issues driving the Future for Diesel

- Technology validation and Market Acceptance
  - Both light and heavy-duty; see you in 2010!
- Preservation of economics that make sense and characteristics and benefits unique to diesel in the competing trade-offs of fuel economy, emissions, climate, business goals:
- Public Perceptions:
  - Increasing sophistication with environmental quality, personal awareness and choices;
- Fuel: Relative prices, Renewables, Fuel as a policy driver (low carbon fuel standard).
Biggest challenges are also the greatest opportunities

- Reducing greenhouse gas emissions
- Reducing reliance on imported oil
- Low Carbon Fuel Strategy
- Use of more renewable energy
- Improving fuel economy
- Improving Air Quality
## Key Influences for the Future of Diesel

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>It’s new, clean, real: 2007 Cleaner Fuel and heavy-duty trucks --availability, price, supply, performance</td>
<td>⭐⭐⭐⭐⭐</td>
</tr>
<tr>
<td>Light Duty Diesel – Tier 2 Bin 5, 50 state – can do; real product announcements + some wishy-washiness</td>
<td>⭐⭐⭐</td>
</tr>
<tr>
<td>Renewable Fuels – everyone’s talking home grown fuel, looking beyond basic bio, cost, quality, timing, -- new and unknownnessy</td>
<td>⭐⭐</td>
</tr>
<tr>
<td>Addressing the Old: Legacy Products</td>
<td>⭐⭐⭐⭐</td>
</tr>
<tr>
<td>Chasing the money – DERA &amp; CMAQ, Policy approaches coming on – California mandate vs. voluntary;</td>
<td></td>
</tr>
<tr>
<td>BIG Diesels Ports, Trains – unique, playing catch up, negative media + progressive policies</td>
<td>⚡⚡</td>
</tr>
<tr>
<td>The BIG Policy Dance: Climate Change, Fuel Economy, Emissions – can diesel deliver it all?</td>
<td>⚡⭐</td>
</tr>
<tr>
<td>California -- has it all: Greenhouse gases, Low Carbon Fuels Std, 50 state diesel? Technology neutral, right?</td>
<td>⭐⭐⭐⭐</td>
</tr>
</tbody>
</table>
To further advance diesel technology

• Embrace and highlight the synergies of renewable fuels and clean diesel fuel and technology;

• Expand on record of meeting technology commitments and expectations … *Can 2010 look like 2007?*

• Light duty diesels must be successful

• Contribute positively to the policy and technical solutions for legacy products

• Expand the message reach for clean diesel technology
Then vs. Now

Year 2000:......

Can we preserve Diesel as an option for the future?

“diesel is the problem – we must eliminate it”

Year 2007....

“diesel is a solution– using more offers a benefit”