

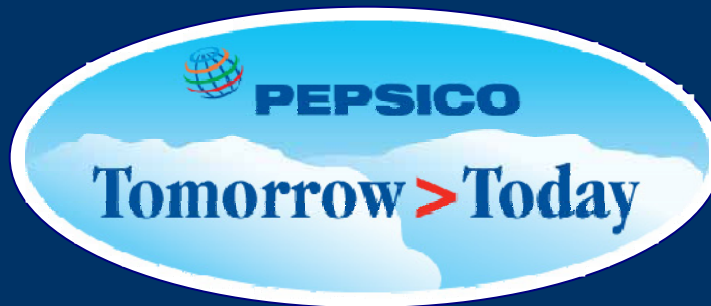


*Frito-Lay*

*GreenHouse Gas Reductions*

*thru the*

*EPA Climate Leaders Program*



# Our Sustainability Vision



PepsiCo's responsibility is to continually improve all aspects of the world in which we operate -- environment, social, economic --  
Creating a better tomorrow than today.



*"Sustainability is one of PepsiCo's most important business imperatives."*



Indra Nooyi ● PepsiCo CEO









**PEPSICO**

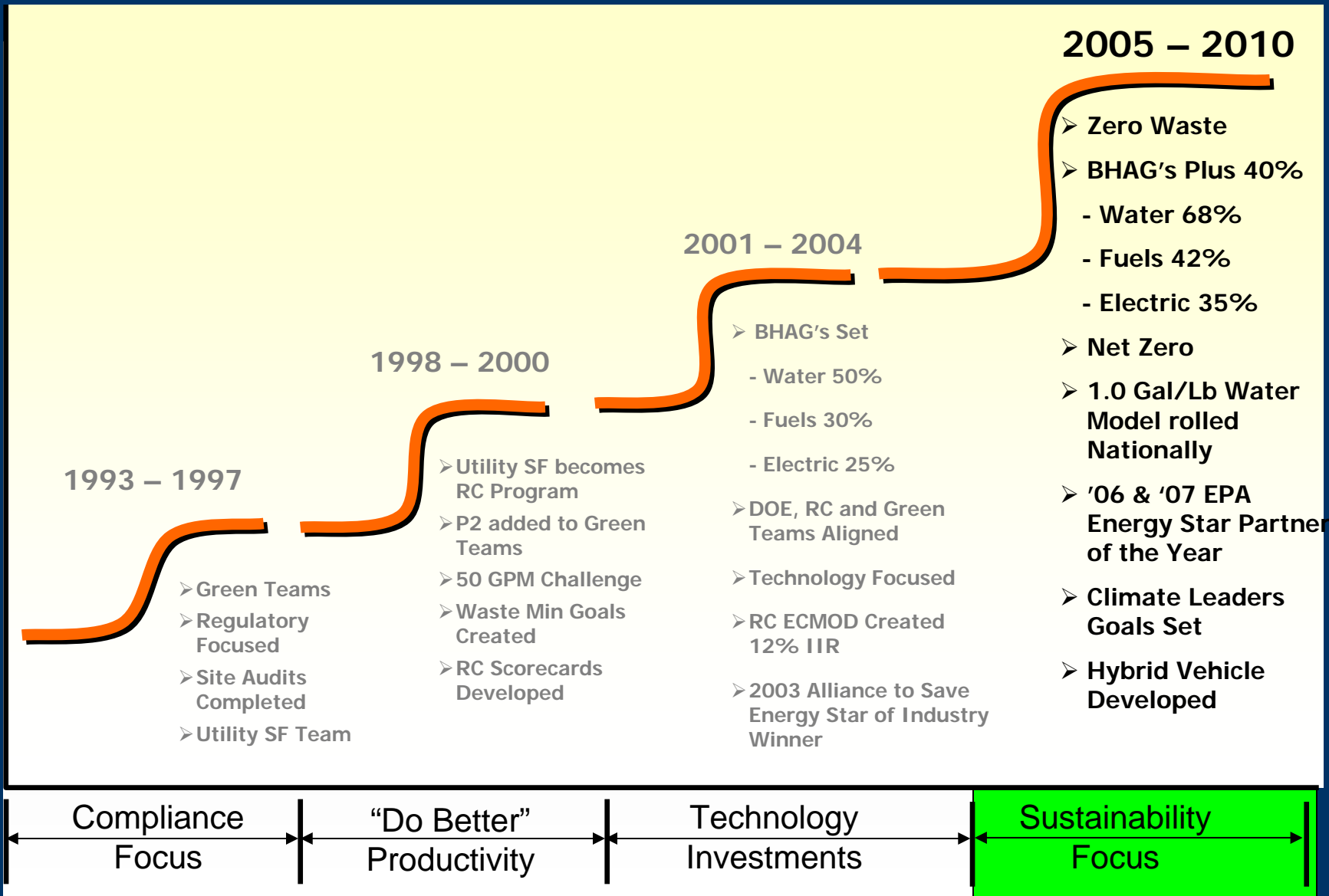
**Tomorrow > Today**

# At Frito-lay We're weaving Resource Conservation and Sustainability into our Supply Chain – from Seed to Shelf



Raw Materials/ Packaging	Manufacturing	Network	WHSE & Sales Ops	Route Sales	Retail
					
<ul style="list-style-type: none"> <li>• Potatoes</li> <li>• 55 Growers</li> <li>• Research Facility</li> <li>• Corn</li> <li>• 2 Facilities</li> <li>• Oil</li> <li>• 12 Suppliers</li> <li>• Film</li> <li>• 4 Suppliers</li> </ul>	<ul style="list-style-type: none"> <li>• 41 Manufacturing Plants in US, Canada and Mexico</li> <li>• 35 Co-Packers</li> </ul> <p style="text-align: center;">Natural Gas, Electric &amp; Water</p>	<ul style="list-style-type: none"> <li>• 8th Largest Private Fleet in US</li> <li>• 1,000 Tractors</li> <li>• 4,000 Trailers</li> <li>• 130MM Miles</li> </ul> <p style="text-align: center;">Diesel Fuel</p>	<ul style="list-style-type: none"> <li>• 193 Distribution Centers</li> <li>• &gt;1400 Bin Locations</li> </ul> <p style="text-align: center;">Natural Gas &amp; Electric</p>	<ul style="list-style-type: none"> <li>• 14,000 Route Vans</li> <li>• 3,000 Box Trucks</li> <li>• Hybrid Vehicle Program Sales Cars</li> </ul> <p style="text-align: center;">Diesel Fuel</p>	<ul style="list-style-type: none"> <li>• 19,000 Super Markets</li> <li>• 250,000 UDS</li> <li>• 1,000 Club Stores</li> <li>• 7,000 Mass Merch</li> </ul>

# FL's Resource Conservation Program has transformed from a Compliance to Sustainability Focus

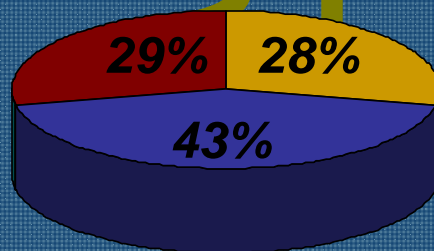


# GreenHouse Gas Sources are Straight Forward...



## Reductions Commitment – By 2010

- 14% from 2002
- 30% from 1999



# Capital investments and RC performance have yielded solid ROI ...



**\$MM**

\$MM	2001	2002	2003	2004	2005	2006
Estimated Capital	\$19	\$23	\$20	\$18	\$16	\$15
Productivity	\$6	\$7	\$6	\$8	\$7	\$7

**IRR = 25%**

## Natural Gas

- Oven IR Burner Upgrade
- PC Surface Moisture Red.
- Insulation and Trap Impr.
- Corn Cook Water Pre-Heat
- Oven Draft Control
- TC Oven IR Auto Shutoff
- Boiler Controls Upgrades
- PC Heat Exchanger Rebuilds
- PC Hx Air to Air Heat Exch.

## Electric

- EER+ & HVAC Management
- Corn Transfer Modifications
- Central Chillers
- VFD Air Compressors
- Regenerative Blowers
- Air Pressure Reductions
- Natural Lighting
- T12-T8 Lighting Retrofits

## Fuel

- Idle Shutdown
- Auxiliary Power Units
- Aerodynamics
- Vehicle Specs
- Route Optimization
- Auto Transmissions
- Soy Bio Diesel

## '07 – '09 Initiatives

- Modesto Solar
- TC HX Recovery
- Bio-Mass Boiler

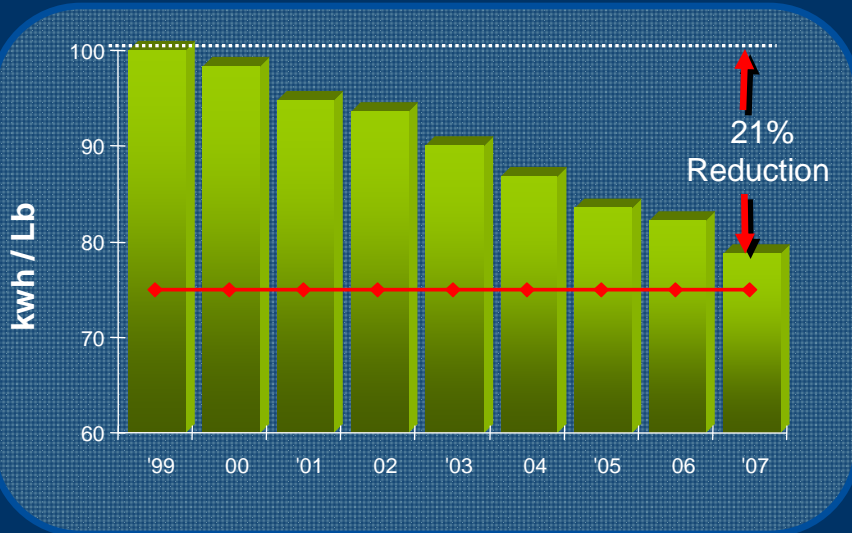
- Co-Generation
- Photo Voltaics

- 2X MPG by 2010
- Hybrid Technology

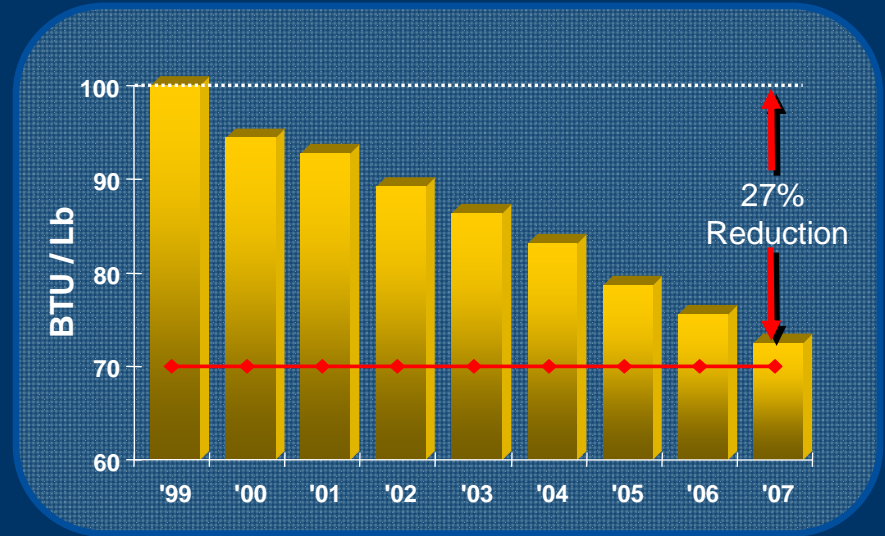
# We are on Target to Hit our 30% & 25% Reduction Goals from our '99 Baseline



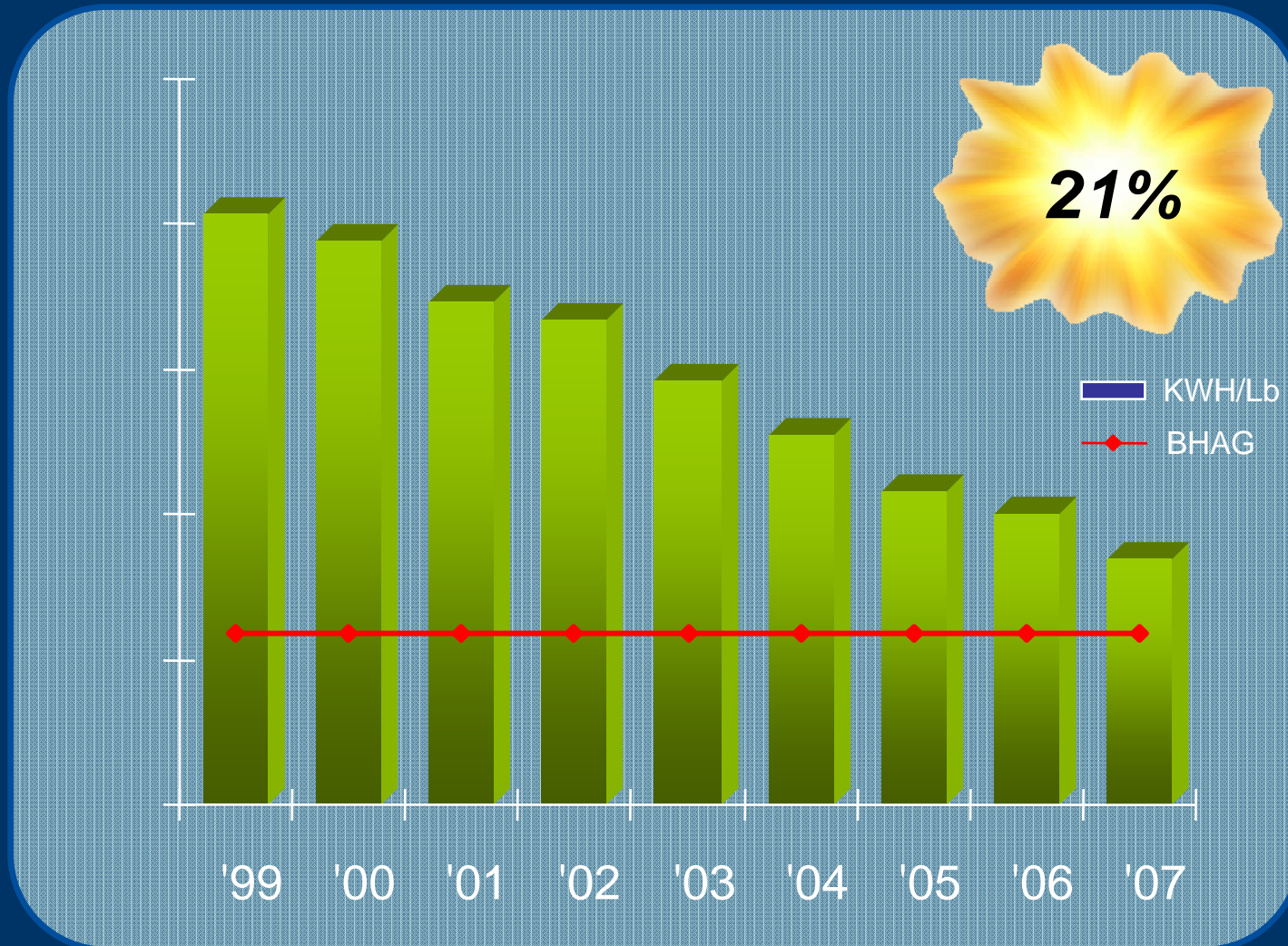
*Electric*



*Natural Gas*



# Electric Performance – Thru 2006





# Electricity Savings – '99 Run Rate with '06 Pounds



**Savings Equivalent to 14,000 Average Single Family Homes**

# Electric Technology



*VFD Air Compressors*



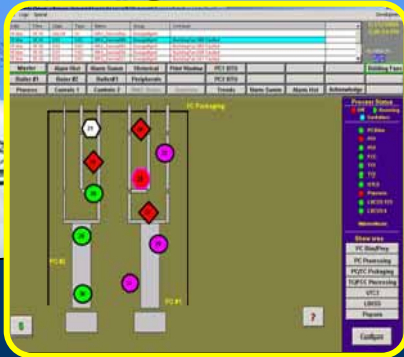
*Natural Day Lighting*



*Chillers*



*Lighting Upgrades*



*Building Management Systems*



## DC's w/ PhotoVoltaics

- San Diego
- La Mirada
- City of Industry
- Los Angeles
- Sylmar
- Rochester
- Arizona Service Center



## Killingly Co-Gen

- State Grant \$1.7MM
- 4.6MW Turbine
- Waste Heat to Steam
- 35% to 55% efficiency gain

# Renewable Energy Certificates



**PepsiCo Is the Largest Purchaser of Renewable Electricity Certificates in North America!**





# 2007 Green Power Participants



U.S. Environmental Protection Agency

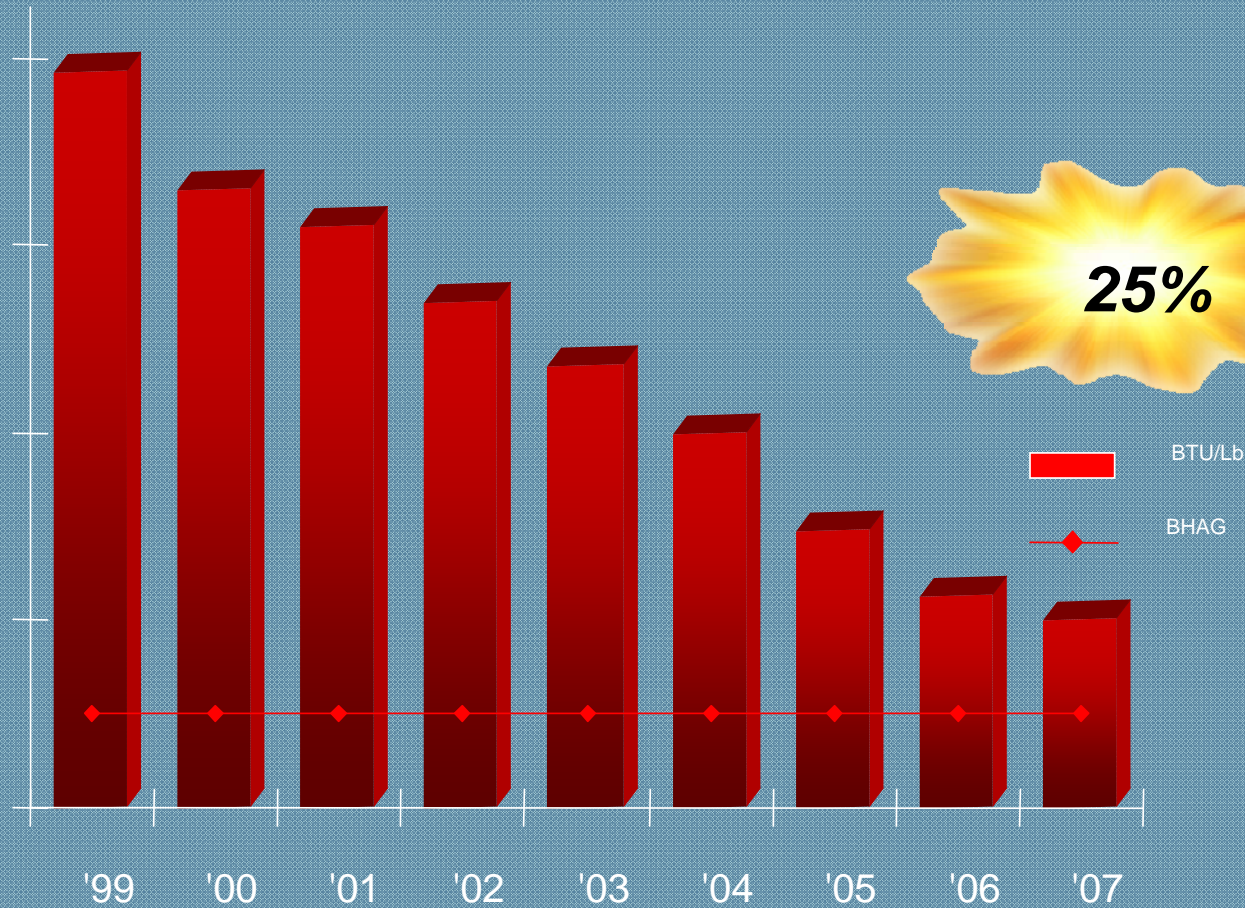
## Green Power Partnership

Contact Us Search:  All EPA  This Area    
 You are here: [EPA Home](#) » [Climate Change](#) » [Clean Energy](#) » [Green Power Partnership](#) » [Top Partner Rankings](#) » [National Top 25](#)

<u>Ranking</u>	<u>Company</u>	<u>Green Power Usage (kWh)</u>	<u>% of total Electricity</u>	<u>Resources</u>
1	<b>PepsiCo, Inc.</b>	<b>1,105,045,000</b>	<b>100%</b>	<b>All</b>
2	Wells Fargo & Co	550,000,000	42%	Wind
3	Whole Foods	509,104,786	100%	Biomass, Geothermal, Hydro, Solar,
4	<b>Pepsi Bottling Group</b>	<b>457,851,838</b>	<b>100%</b>	<b>All</b>
5	US Air Force	457,500,000	4%	Biomass, Geothermal, Solar, Wind
6	Johnson & Johnson	400,702,978	39%	Biomass, Hydro, Solar, Wind
7	US EPA	329,880,185	100%	Biomass, Geothermal, Wind
8	Kohl's Department Stores	201,396,000	20%	Biogas, Bio Mass
8	LA County Sanitation	196,003,000	57%	Biogas
9	Starbucks	185,000,000	20%	Wind
10	DuPont Co	180,000,000	4%	Biogas, Wind
	<b>Pepsi Americas</b>	<b>157,062,875</b>	<b>100%</b>	<b>All</b>
	<b>Pepsi Bottling Ventures</b>	<b>14,541,081</b>	<b>100%</b>	<b>All</b>

**PepsiCo is purchasing RECs for 100% of Our Power Requirements**

# Natural Gas Performance – Thru 2006



# Fuels Savings – '99 Run Rate with '06 Pounds



**Savings Equivalent to 180,000 Homes for the Winter**

# Natural Gas Technologies Employed – Initial Tactics



*PC Moisture Control*



*PC HX Upgrades*



*High Efficiency Boilers*



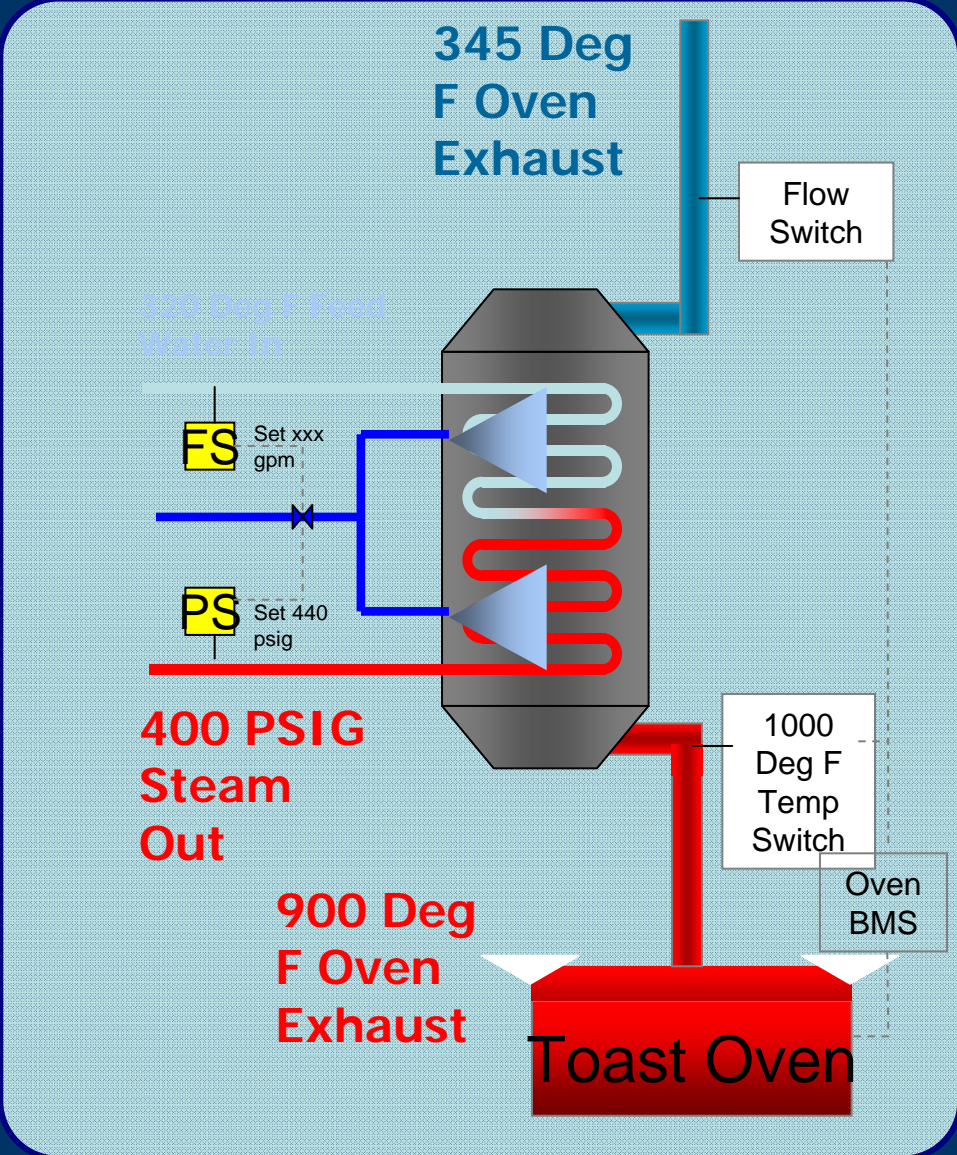
*High Efficiency  
Oven Burners*



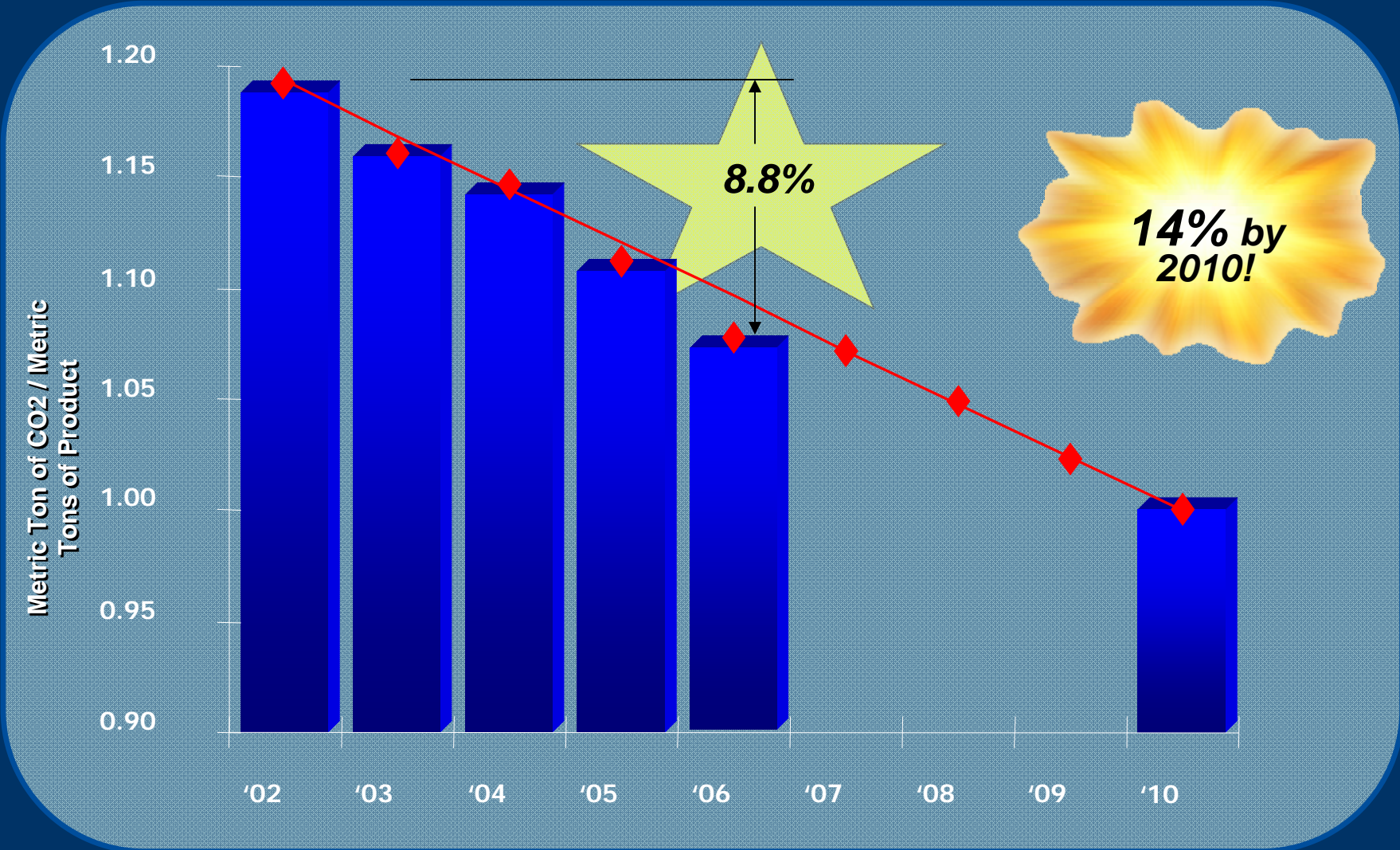
*PC Stack Heat Recovery*



# Natural Gas: Free Fryer Heat in San Antonio, Beloit and Perry



# GHG Emissions – Progress thru 2006



# What's Next?

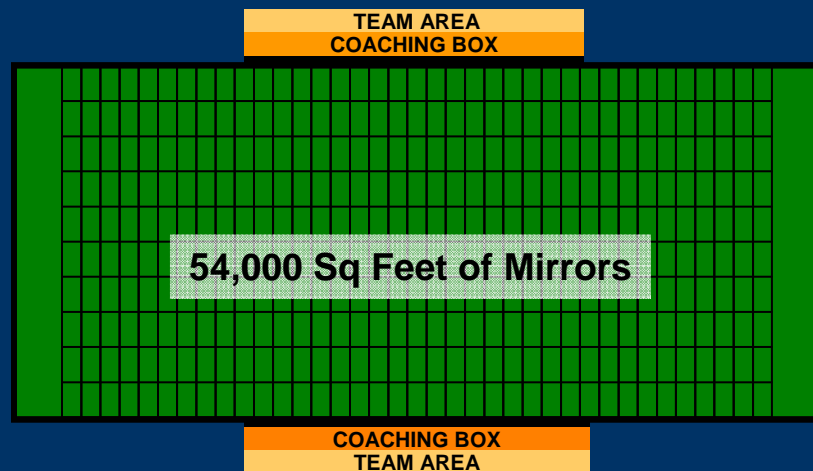


- Greater Utilization of Solar
- Realization of Savings from Fleet Tactics
- Biomass for Boiler Fuels
- Tactics Not Yet Known.....

# Next - Natural Gas Reduction – Solar Concentration



At our Modesto Plant  
over 75% of Annual  
BTU's Needed for  
SunChips will be  
Produced by Solar  
Thermal Energy



# Casa Grande, Az... Photovoltaics and Solar Thermal will Provide Steam and Electricity



**Solar Concentrators Produce  
Steam and Electricity**



**Photovoltaics Produce Electricity  
Covered Employee Parking**

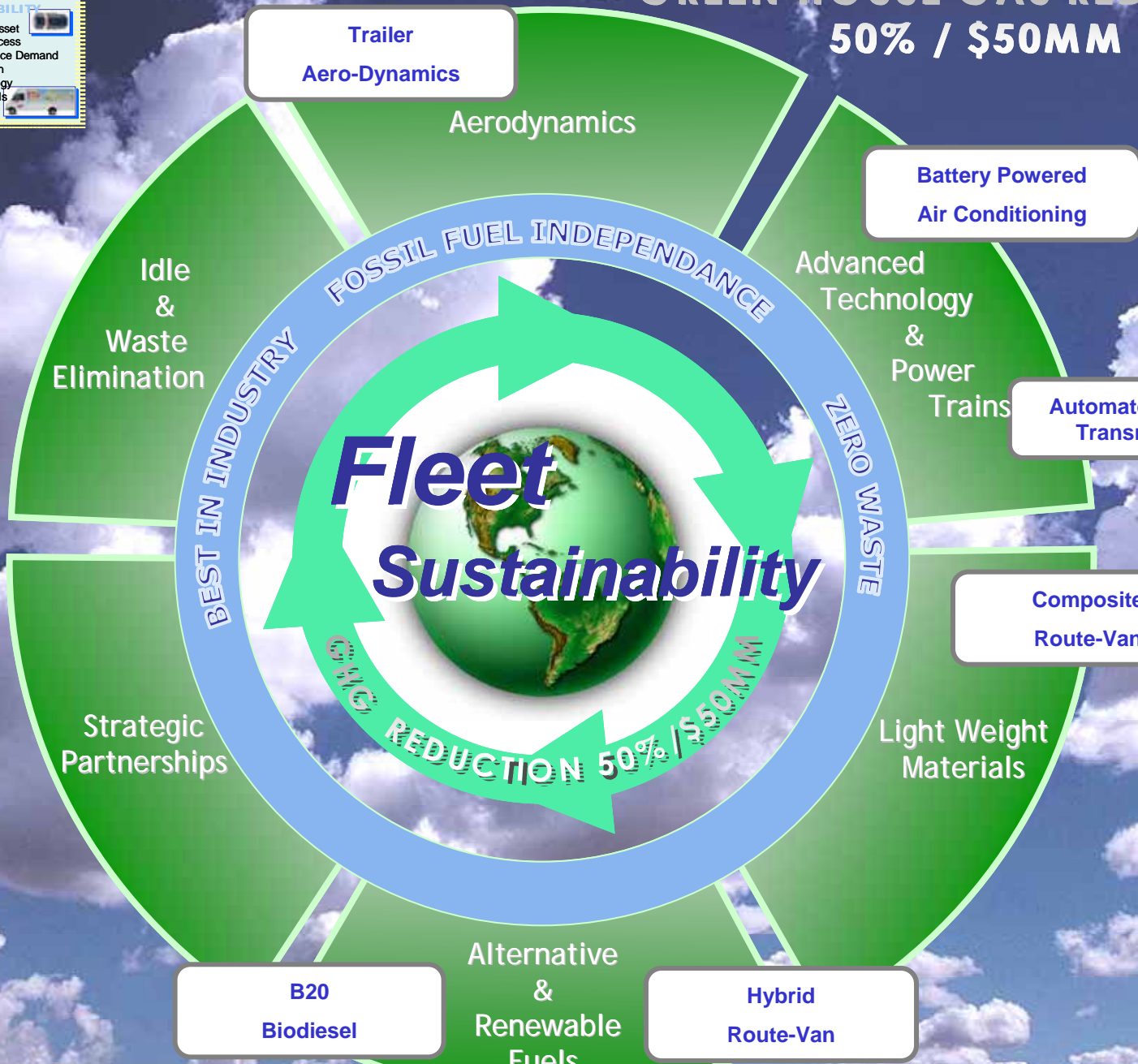
*Size the Solar Field to Provide 100% of Electricity and  
Steam for SunChips...*

# GREEN HOUSE GAS REDUCTION

## 50% / \$50MM

**FLEET SUSTAINABILITY**

- Cradle to Grave Asset Sustainability Process
- Reduced Natural Resource Demand
- Idle Elimination
- Hybrid Technology
- Alternative Fuels



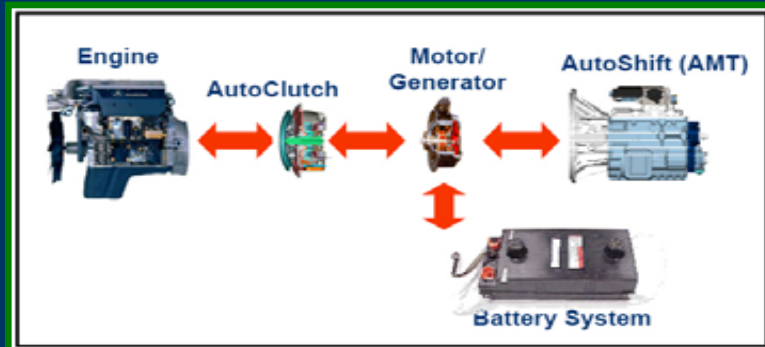


# Fleet Tactics – Hybrid Route Van



## Opportunity:

- Current Route Van Engine has More Power than Necessary for Frito-lay's Application
- Implementation of Known Technology will Reduce GHG and Align with Fleet Business Strategy
- Re-investment of Productivity will Enable Hybrid Technology Strategy that will Deliver Incremental Productivity



## Strategy:

- Implementing a Two-Phased Approach will Achieve Green House Gas Reduction of 50% and Deliver \$50MM
- (Phase 1) Convert Future Route Vans to 4-Cylinder Versus 8-Cylinder Engine

\$1.1MM

Base MPG  
10 MPG

4-Cylinder Engine  
15 MPG

Base replacement  
of 1000 vehicles

- (Phase 2) Convert To Hybrid Technology

Base MPG  
10 MPG

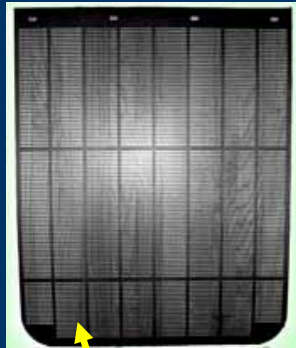
4-Cylinder Engine  
15 MPG

4-Cylinder Hybrid  
21 MPG

\$0.8MM



# Fleet Tactics - Trailer Aerodynamics



- Low-drag mud flaps
- Belly Fairing



## Strategy

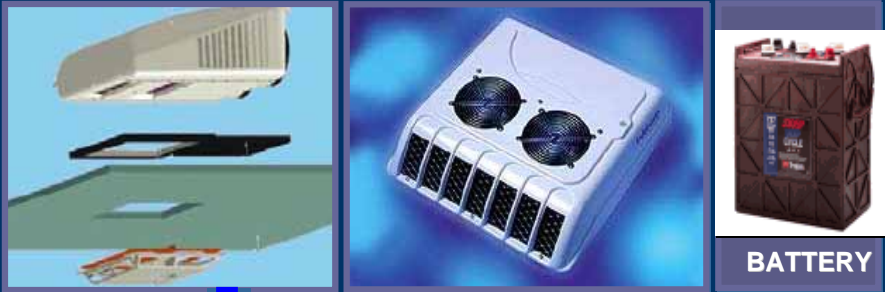
- Testing in Frito Lay Bakersfield and Vancouver Traffic Centers
- Design in Development of 53' drop Frame Trailers
- Received Grant Funding for Testing, Seeking Addition Grant Funding

## Project Description

- Utilize Aerodynamic Aids to Eliminate Drag
- Qualify Vendors Through Independent Testing
- Verify Independent Testing with Frito-Lay on Road Testing



# Fleet Tactics – Battery Powered Air Conditioning



- Strategy
- Eliminate Environmental Impact from Air Conditioning Demand
- Drive RSR Retention in the Face of a Shrinking Workforce
- Maintain Vehicle Cost Advantage Through Vehicle Redesign

## Project Description

- Install Air Conditioning as a Standard on Route Vans
- Develop Battery Operated A/C
- Utilize Solar and Regenerative Braking for Battery Recharging



# Automated Manual Transmission

**3-5% MPG Gain**



Volvo I-shift



Eaton UltraShift



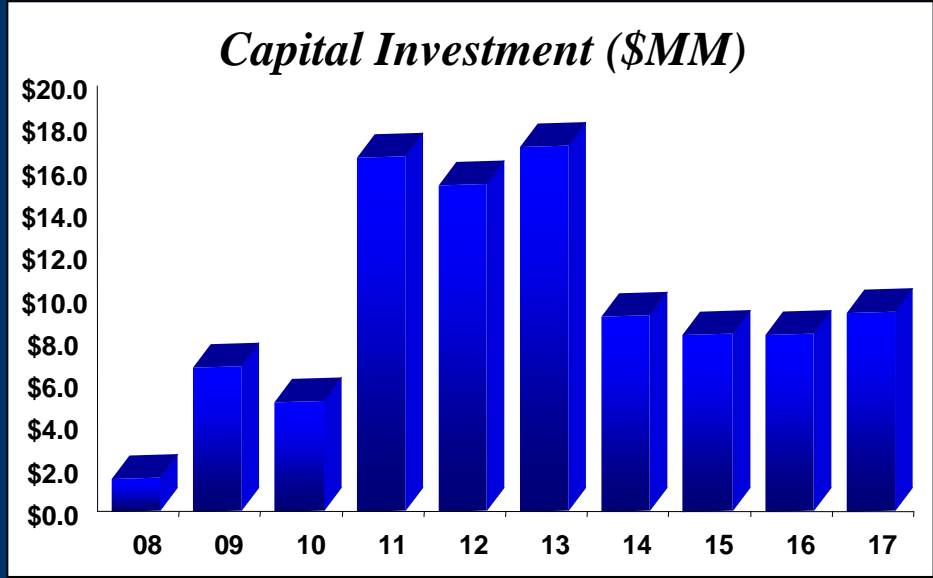
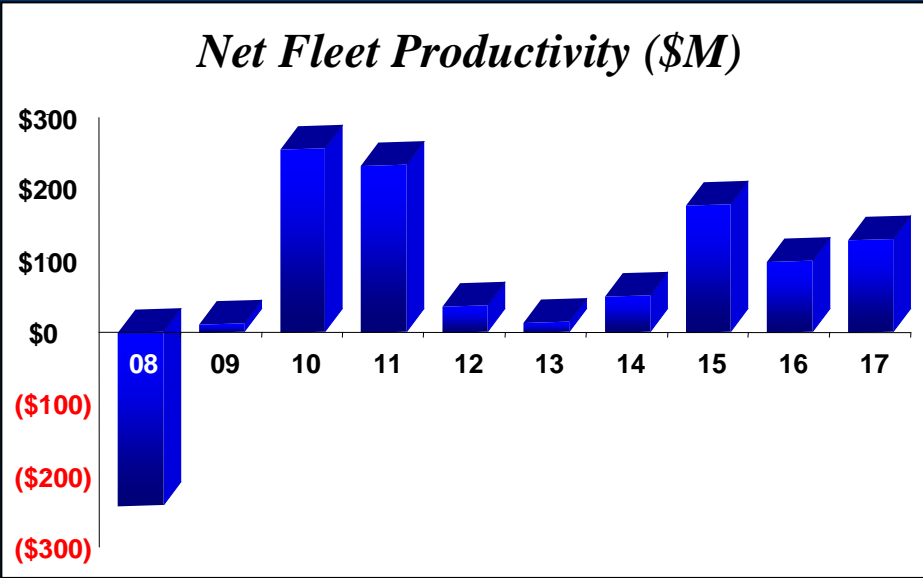
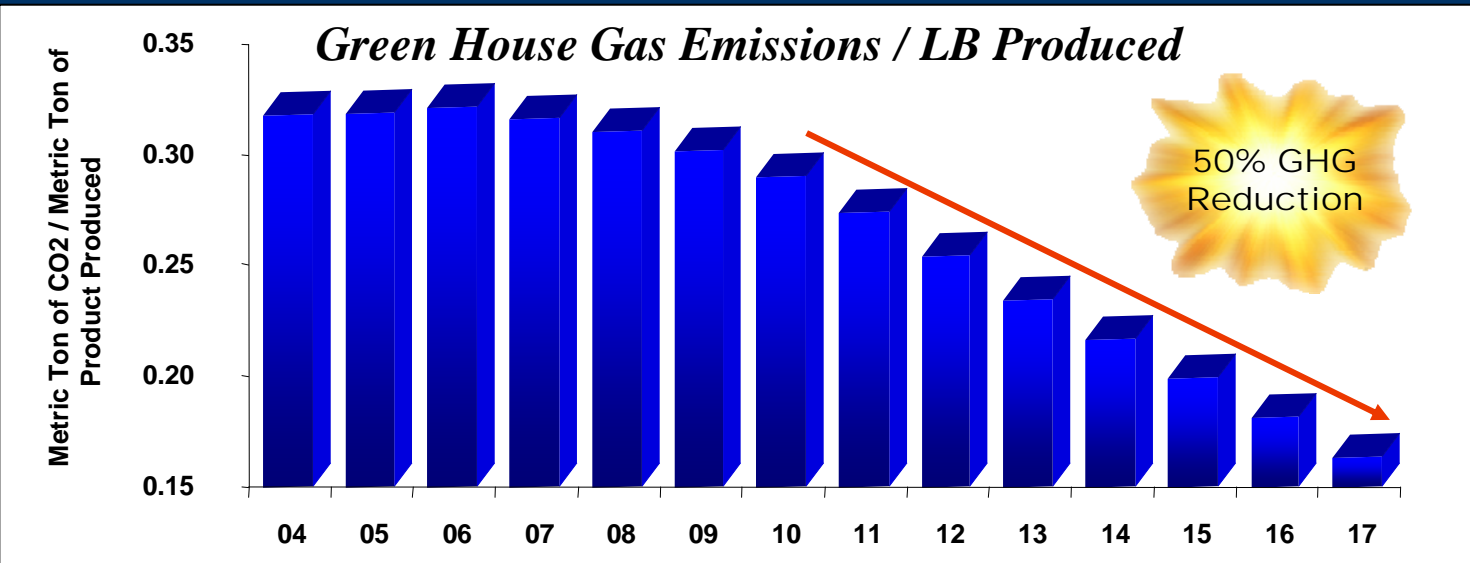
Straight Truck



Class 8 Tractor

- Strategy
  - 50 Straight Trucks / 10 Class 8 Ultrashifts Ordered in for 2007
  - Volvo-shift will be Available for 2008 Production (New to North America, Superior Performance)
  - High Level of Driver Acceptance
- 
- Project Description
  - 3-5% MPG Improvement and Therefore a Reduction in GHG Emissions
  - Assist in Driver Attraction and Retention
  - Reduction in Vehicle Maintenance Cost

# Fleet Sustainability Metrics Projections

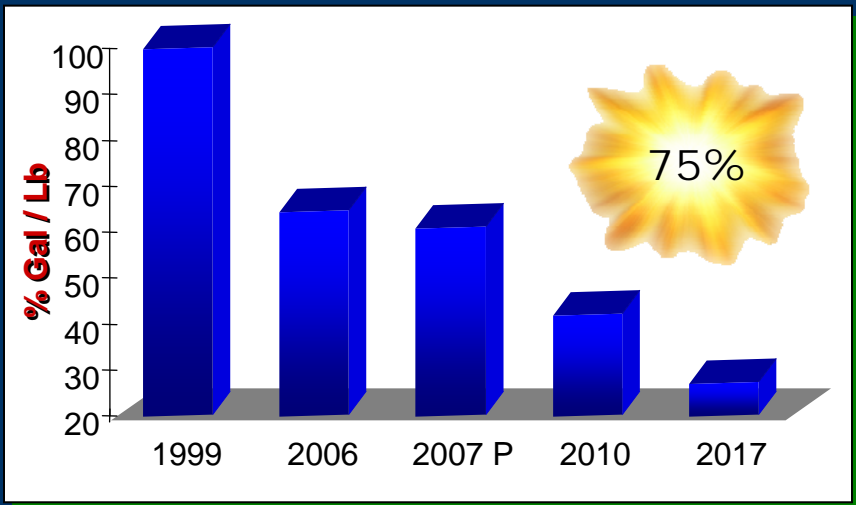


# Performance with a Purpose: \$50MM Saved Between '99 & '06

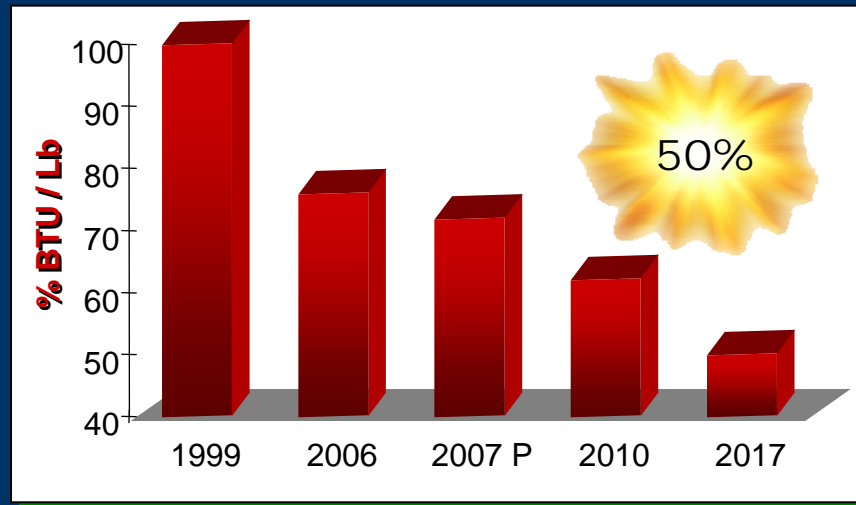
## – Reset for '07 to '17 will Deliver an Additional \$100MM



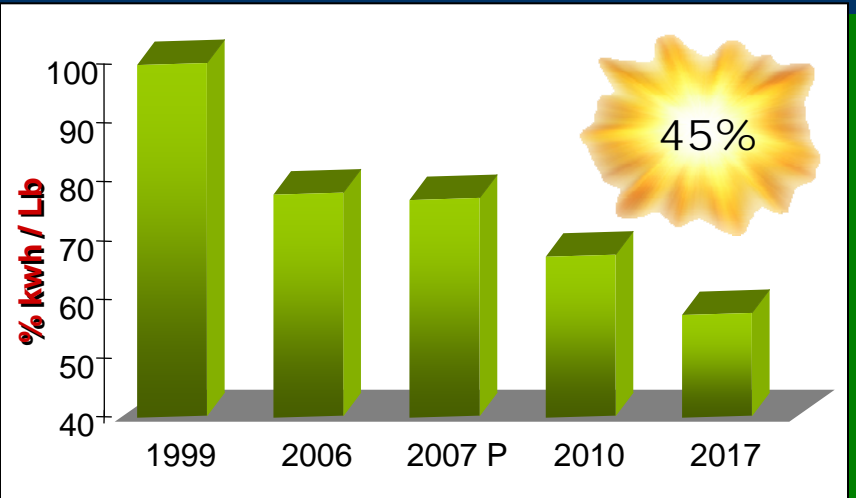
### Water



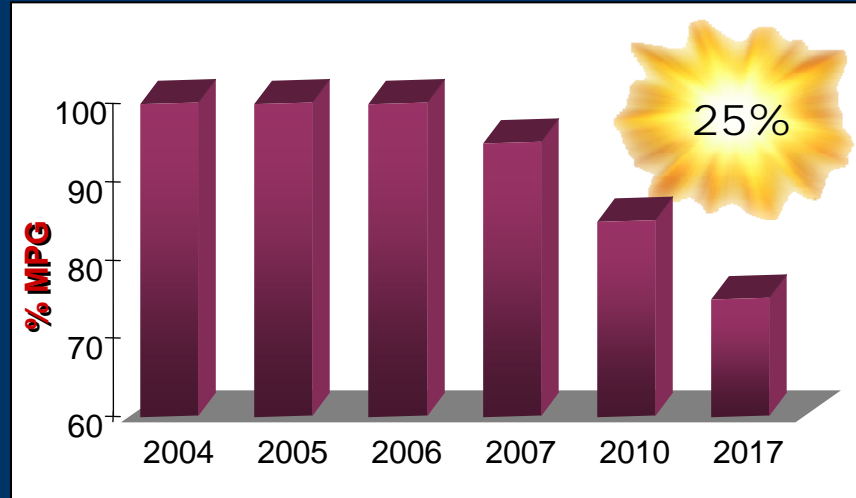
### Fuel



### Electric



### Diesel



**TODAY**



*Preserving*  
**THE PLANET**

*Tomorrow*