

IRR of Clean Commercial Vehicles



VELOCITY VEHICLE GROUP

MOVING YOU FORWARD

ONE NAME. ONE FAMILY. ALL THE BEST BRANDS.



We represent leading commercial vehicle brands in Southern California, Nevada and the greater Southwest

We are actively involved in clean solutions for small, medium and large trucks and buses

- **Natural gas trucks and buses**
- **Electric delivery trucks**
- **Port and CARB 1B programs**
- **Clean diesel powertrains**
- **Retrofits for trucks and buses**

We can provide perspective on state of the market for clean truck and bus solutions



Trucking has highest share of good movement

- 80% of the value of goods, 55% of the weight
- 15M trucks, 2M tractor-trailers
- 9M employed in trucking segment
- 360k companies, \$255B in industry revenue
- Truck ton-miles increasing at 3-4% annually over the cycle

Fuel is one of the largest costs of trucking

- Fuel typically 40% of operating costs, largest single cost
- Labor next at 30%

Fuel prices have increased dramatically

- Up from as low as 20% of cost in the past
- Oil is in a long-term secular swing upward
- Volatility will remain high

Driver behavior

- **Huge differences in fuel consumption between drivers**
- **Low cost, high management complexity to implement fuel saving programs**

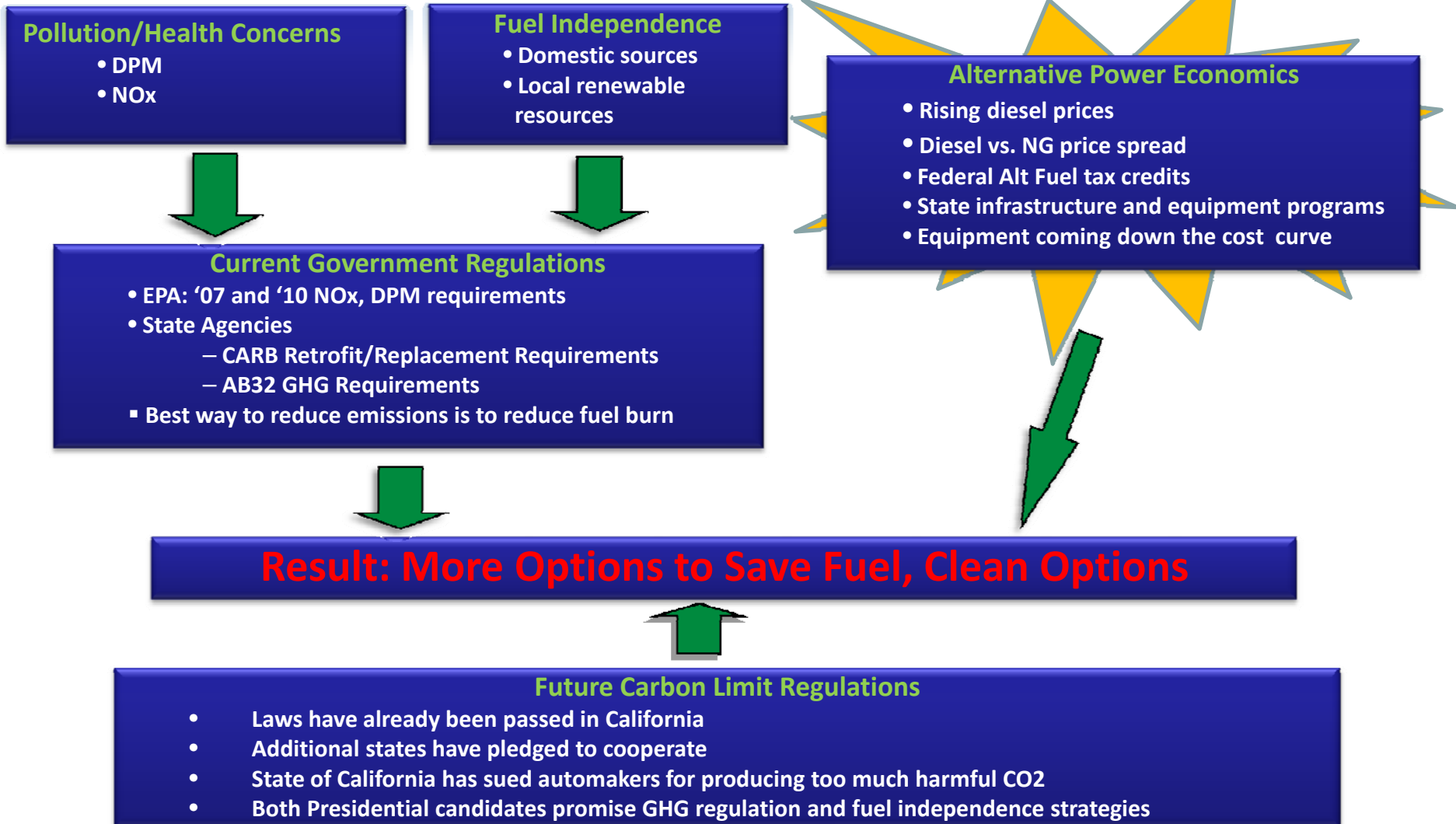
Add-ons to reduce fuel consumption

- **Aerodynamics**
- **Idling**

New equipment options can offer significant fuel savings

- **Higher capital cost**
- **Potentially larger benefits**
- **State/Federal funding**

Regulations and Economics: Past the Tipping Point on Options to Save Fuel



R&D to meet EPA regulations has 'crowded out' much R&D for Alternative vehicles

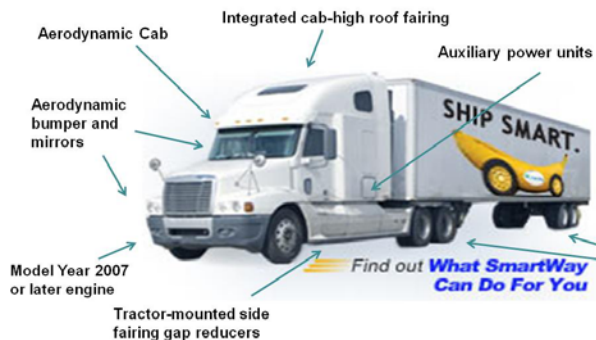
- For '07 diesel have consumed about \$1 Billion in R&D cost among the engine and truck manufacturers
- Similar requirements for '10 EPA regulations

Manufacturers have so far primarily focused on three areas:

Fuel saving configurations and add-on technology – EPA SmartWay

Hybrid diesel-electric

Natural gas power



Hybrid Diesel Electric Vehicles Can Have Huge Benefits in the Right Duty Cycle

Pickup and delivery operations show highest promise for Hybrid technology

- Ample regenerative braking in duty cycle – stop and go
- High idle time replaced with battery support

Parcel delivery companies have committed to Hybrid vehicles due to benefits

- Fedex has several hundred vehicles, plans to expand fleet
- Fedex sees improved fuel economy of 42%, reduced greenhouse gas emissions of approximately 30 percent and reduced particulate pollution of 96%
- UPS also has several hundred Hybrid vehicles with similar benefits

Utility applications also show high benefits due to electric auxiliary power needs

- Replace idle to operate PTO with battery electric power for manlifts, etc.

But requirement for dual power sources makes cost higher than conventional vehicles presently

- Cost was double, but premium is coming down

Emissions benefits

- Lower regulated emissions - No DPM, very low Nox
- And lower GHG emissions, between 20% and 30%

Cost of operations benefits

- Typically from 5-10% reduction in fuel mileage on a diesel gallon equivalent
- Saving between 30% to 50% on a diesel gallon equivalent basis

Federal tax credits

- 50 cent per gallon fuel tax credit
- Up to \$32k per vehicle credit
- Fueling station tax credit

Cost of equipment higher including engine and more expensive tanks



Payback Driven By Cost of Equipment, Fuel Mileage, Fuel Cost, Miles Driven

Additional
Equipment
Cost

Annual
Fuel
Savings

\div Payback in Years

- Miles Driven
- Fuel Mileage
- Fuel Cost

Internal Rate of Return (IRR) is the Return Based on the Present Value of the Cash Flows of the Investment

Example of a CNG distribution truck (Sterling LT8500 ISL-G)

- Additional cost for technology and tanks of \$60k
- Annual savings of \$15,789 (50k Miles at 95% of diesel equivalent fuel mileage, with fuel cost at \$2.00 per diesel equivalent gallon)

Year	1	2	3	4	5	6	7	8
Cost	(\$60,000)							
Savings	\$15,789	\$15,789	\$15,789	\$15,789	\$15,789	\$15,789	\$15,789	\$15,789
Cash Flow	(\$44,211)	\$15,789	\$15,789	\$15,789	\$15,789	\$15,789	\$15,789	\$15,789

IRR 30%

IRR of 30% represents the PV discount rate of the cash flows above what is required to pay back the additional cost – a handsome return

Most Technologies Have a Positive IRR Based on Fuel Cost Savings

	Technology	Technology Cost	Fuel Mileage Impact	Cost Per Diesel Equiv. Gallon	Miles/Year	Annual Savings	Years to Payback	Vehicle Life	IRR
P&D	Hybrid	40,000	42%	4.00	50,000	9,859	4.1	8	26%
	CNG	40,000	-5%	2.00	50,000	15,789	2.5	8	60%
Distribution	Hybrid	40,000	30%	4.00	60,000	9,231	4.3	8	23%
	LNG	50,000	-5%	2.50	60,000	13,684	3.7	8	32%
Line Haul	LNG	90,000	-8%	2.50	90,000	19,459	4.6	5	12%

When Federal Subsidies are Included, IRRs are Better Still

	Technology	Technology Cost	Subsidy	Net Technology Cost	Fuel Mileage Impact	Cost Per Diesel Equiv. Gallon	Miles/Year	Annual Savings	Years to Payback	Vehicle Life	IRR
P&D	Hybrid	40,000	9,000	31,000	42%	4.00	50,000	9,859	4.1	8	43%
	CNG	40,000	20,000	20,000	-5%	2.00	50,000	15,789	2.5	8	375%
Distribution	Hybrid	40,000	9,000	31,000	30%	4.00	60,000	9,231	4.3	8	38%
	LNG	50,000	32,000	18,000	-5%	2.50	60,000	13,684	3.7	8	317%
Line Haul	LNG	90,000	28,800	61,200	-8%	2.50	110,000	23,784	3.8	5	57%