

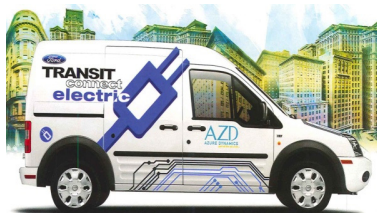
AZD
AZURE DYNAMICS
part of the solution



Getting Plugged into the Newest Technology
October 2011

Company Overview

- Leading manufacturer of control, powertrain systems and drive technologies for EVs, HEVs and PHEVs
- Solid IP position in electric drive components, systems, and controls
- Over 2,200 hybrid and electric drive vehicles sold or on-order since 2008
- Partnership with Ford for the light- to medium-duty commercial market



Partners



Customers



Driving a *WORLD* of difference

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AZD Full Suite of Solutions

Class 2c – 5 Light and Medium Duty Commercial Truck Market

300,000 Vehicle per year Market (50%+ Ford)

Class 1c Transit Connect Electric



- ✓ Utility Services
- ✓ Telecommunications
- ✓ Government
- ✓ Lease/Rental
- ✓ Special Trades

Class 2c Large Cargo Van (next target)



- ✓ Lease/Rental
- ✓ Services
- ✓ Delivery
- ✓ Special Trades
- ✓ Utility

Class 4 E450 Delivery Van/ Shuttle Bus



- ✓ Delivery
- ✓ Shuttle bus
- ✓ Telecommunications
- ✓ Government
- ✓ Lease/Rental

Class 5 Super Duty – F550 Cab & Chassis



- ✓ Construction
- ✓ Delivery
- ✓ Services
- ✓ Government
- ✓ Shuttle bus

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Why Do EV's Commercially Make Sense?

As ranked by a recent poll from CALSTART's E-Truck Task Force

- 1) Reduced fuel costs
- 2) Petroleum independence
 - > Not just from a security standpoint, but from a flexibility standpoint, since electricity can be produced from many sources
 - > Less uncertain operating cost – less fluctuation in electricity cost than in petroleum prices
- 3) Reduced maintenance costs
- 4) No tailpipe emissions
- 5) Corporate Image
- 6) Simpler vehicle maintenance

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Why Don't EV's Commercially Make Sense?

- > **SIGNIFICANT UPFRONT INCREMENTAL INVESTMENT**
 - > EV purchases are still heavily dependent on government rebates and funding. And fleets are requesting more rebates to offset costs.
 - > Actual business case payback is 5-10 yrs, versus a desired 2-3 year payback.
- > Demonstrated reliability equal or better than IC vehicles
- > EV performance
 - > Increased range
 - > Reduced recharge time
 - > Increased payload capacities
- > Lack of infrastructure to support and maintain EV's

Getting Plugged into the Newest Technology

- > The Azure Dynamics Payback Model
 - > The Investment
 - > The Savings
 - > Improving Payback

EV Economic Payback

| Based on Transit Connect Electric | 80 miles/day | 50 miles/day |
|-----------------------------------|--------------|--------------|
| Incremental AZD Technology | \$30,100 | \$30,100 |
| Government Rebates ¹ | (7,900) | (7,900) |
| Annual Savings – Fuel & Maint | (4,500) | (2,800) |
| Pay back in years | 4.9 | 7.9 |

- Every \$0.50 increase in the price of gas/gal – improves payback by 6 months
- Every 15% reduction in cost – improves payback by 6 months

Current Payback Driving Sales – Expected Improvement Will Advance Adoption

Assumptions:

Price of Fuel – Hybrid/per gal (\$4.00 US) ; Electricity/per Kw (\$0.08)

Life of vehicle is 10 years

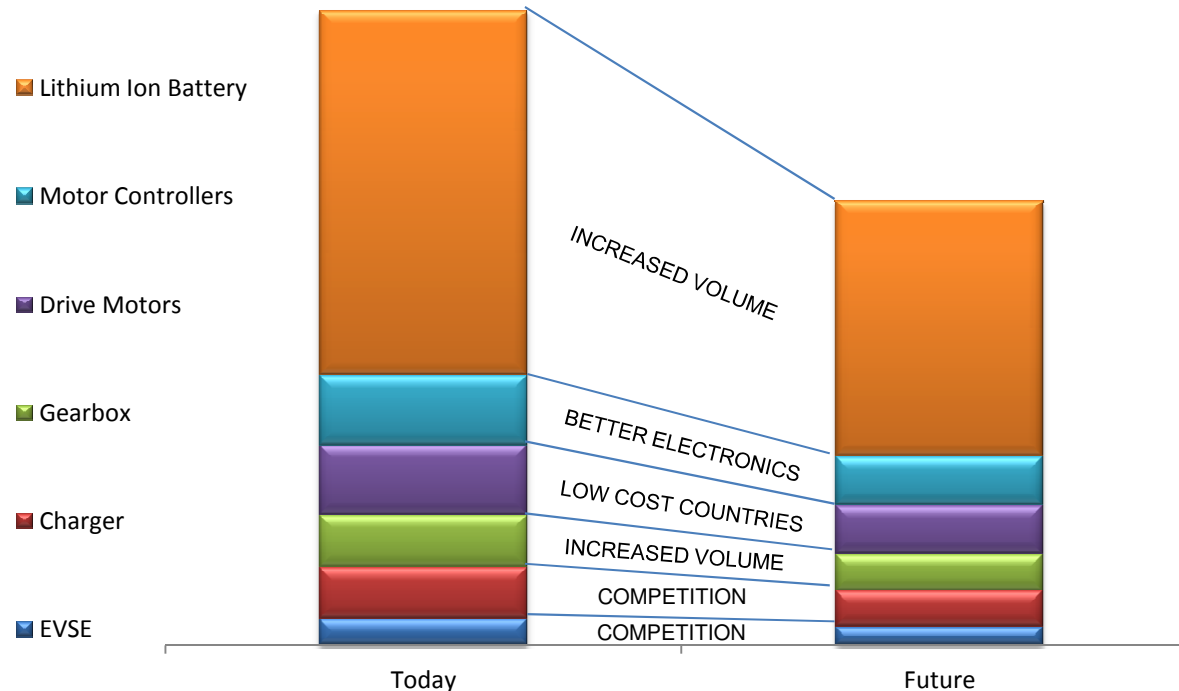
(1) Average customer subsidy based on 2010 sales

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Improving Payback – Reducing Cost

- > The next generation EV's, HEV, and PHEV's (2013/2014) are forecasted to see up to a 30% reduction in cost because of economies of scale, scalable technologies, and increased competition. The largest challenge will be the lithium ion battery.



Driving a *WORLD* of difference

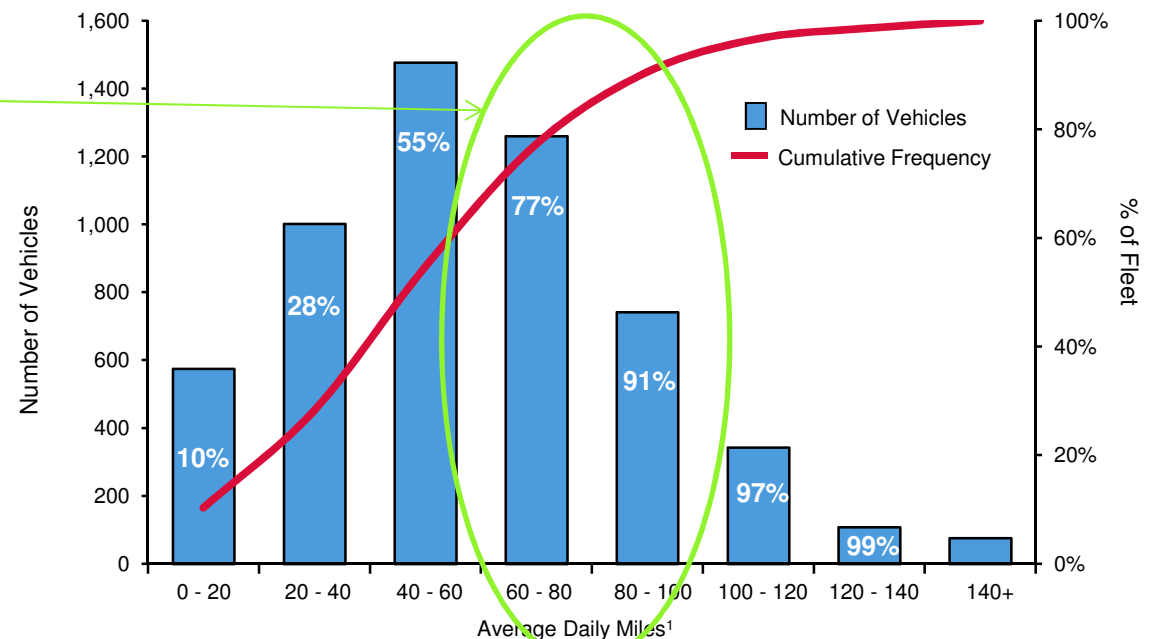
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Improving Payback – Maximizing Mileage

CALSTART's E-Truck Task Force "Best Use Business Case" is currently recommending:

- Driving maximum possible mileage
 - 5 to 7 days per week
 - 70 to 100 miles/day
- Selecting dedicated return to base routes
- Existing infrastructure – central parking depot for charging
- Business case should also evaluate fuel displacement in gallons/day versus miles/day as some fleets have low mileage and high fuel consumption

Representative Typical Fleet Operator in Service Industry



1) Actual fleet operator study, computed from annual numbers assuming a 5 day work week
Source: CY2009 update of Booz & Company analysis

Fleet Operators will be Early Adopters of EV

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What will the payback be in the future?

- > The single largest factor affecting payback is the cost of the lithium ion battery. Unless we see another large cost reduction in batteries or the development of higher density cells the payback will continue to be dependent on:
 - > Government Rebates
 - > Gasoline Prices
 - > Rapid Charging Strategies
 - > “Right Sizing” Batteries
- > Given this scenario the EV adopters will continue to be the fleet companies that maximize their daily mileages. Lower mileage fleets and retail consumers who base their decisions on “value” are more likely to pursue PHEV’s or range extended EV’s.
 - > 90% of US vehicle trips are less than 30 miles
 - > Half of the average daily fleet driving is under 50 miles