

Welcome



**NEW VEHICLE TECHNOLOGIES
FOR GHG REDUCTIONS**

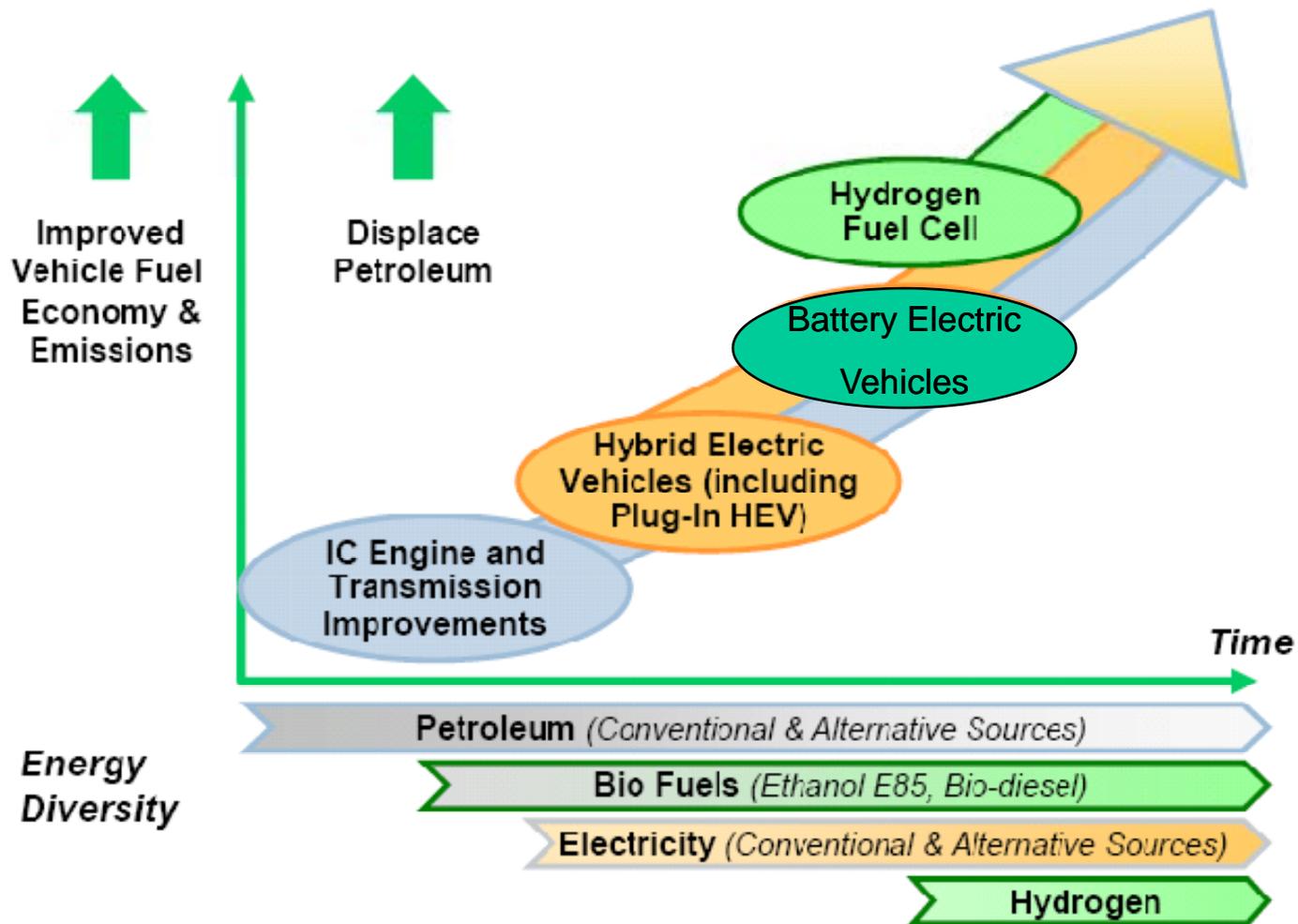
**REG MODLIN
Director – Environmental Affairs
Chrysler LLC**

**Mobile Sources Technical Review Subcommittee
Washington DC
September 17, 2008**

Technologies Needed for GHG Reductions



Advanced Propulsion Technology Strategy

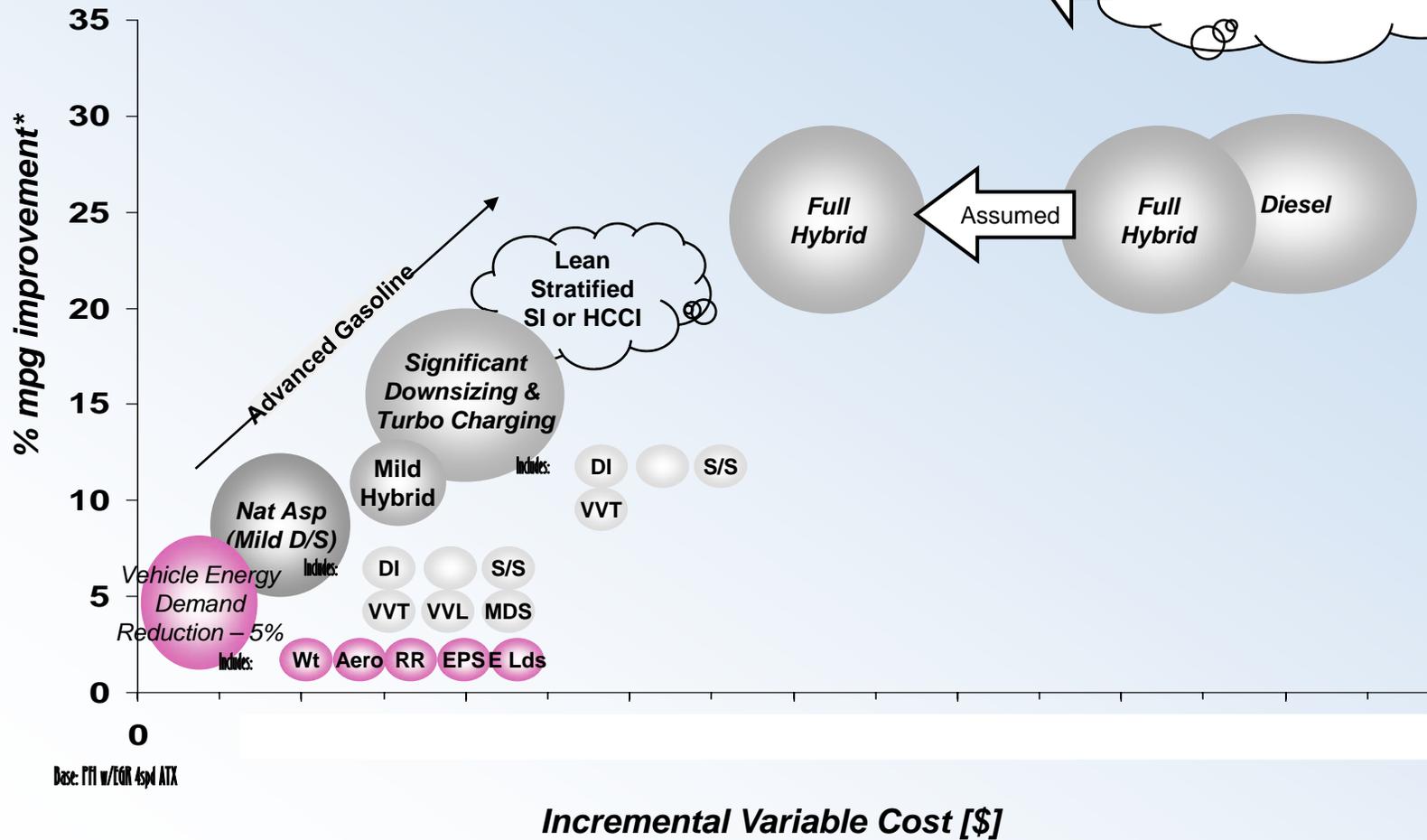




CHRYSLER

Add Increasing Levels of Technology

CAFE / Fuel Economy "Bang for the Buck"



Base: PFI w/EGR 4spd ATX

Jeep® Grand Cherokee – Modern Clean Diesel



- **Advanced diesel technology is available today and can help reduce our nation's dependency on foreign oil.**
- **Diesel can improve fuel economy by an average of 30% and lower CO2 emissions when compared to equivalent gasoline engine.**
- **Light duty diesels could grow from a 3% market share in 2004 to 12% in 2012 in U.S.**
- **Diesels make up half of all passenger vehicles sold in Europe. About 2/3 of Chrysler products in Europe are diesel.**





CHRYSLER

Special Edition 10th Anniversary GEM

- Commemorates 10 years of green transportation at Global Electric Motorcars LLC
- Battery-powered, zero tailpipe emission vehicles
- Available as 2-, 4- and 6-passenger models, utility vehicles
- More than 35,000 GEM neighborhood electric vehicles worldwide
- Driven combined 200 million miles , preventing 150 tons of tailpipe pollutants and saving nearly 10 million gallons of gasoline
- Used in master planned communities, university and corporate campuses, and local, state and national government agencies
- Recognized by WestStart-CALSTART with 2007 Blue Sky Merit Award for its positive impact on air quality in California





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2009 Chrysler Aspen HEMI® Hybrid

- Hybrid fuel efficiency combined with full-size SUV performance, capability and utility
- HEMI® with Multiple Displacement System coupled with hybrid technology
- Combination of low- and high-speed electric continuously variable transmission (ECVT) modes creates advanced, two-mode hybrid
- Delivers more than 25 percent overall fuel economy improvement
- Full-size SUVs boast nearly 40 percent fuel economy improvement in the city
- 6,000 pounds towing capability





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Energy Independence and Security Act of 2007

- Repealed some oil and gas incentives.
- Forces 36 billion gallons of alternative fuel into the transportation fuel pool without consideration of whether customers will buy it.
- Resets fuel economy standards for cars and trucks at 35 miles per gallon overall new vehicle fleet average by 2020.
- Replaces light bulbs.



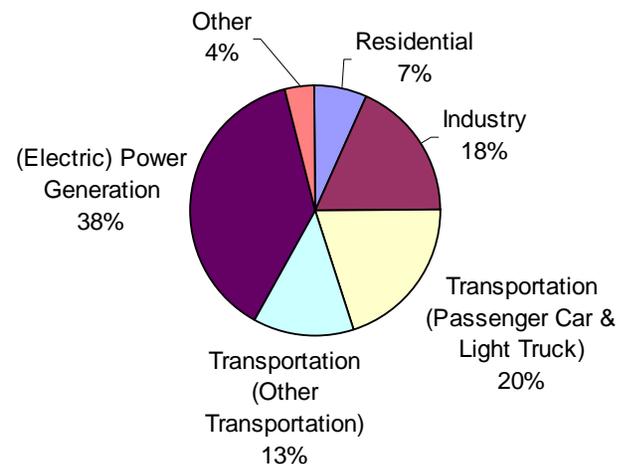
Fundamentals of Sound Energy Policy

- Aim at enhancing energy security by addressing
 - Availability
 - Commercial and social sustainability
 - Uses all available energy sources in an intelligent way
- Aim at creation of alternatives to energy that is currently obtained from use of depleting fossil fuels.
- Aim at reducing emissions of carbon in all sectors.
- Bring the customer into the program.



U.S. CO2 Emissions (Man-Made) by sector

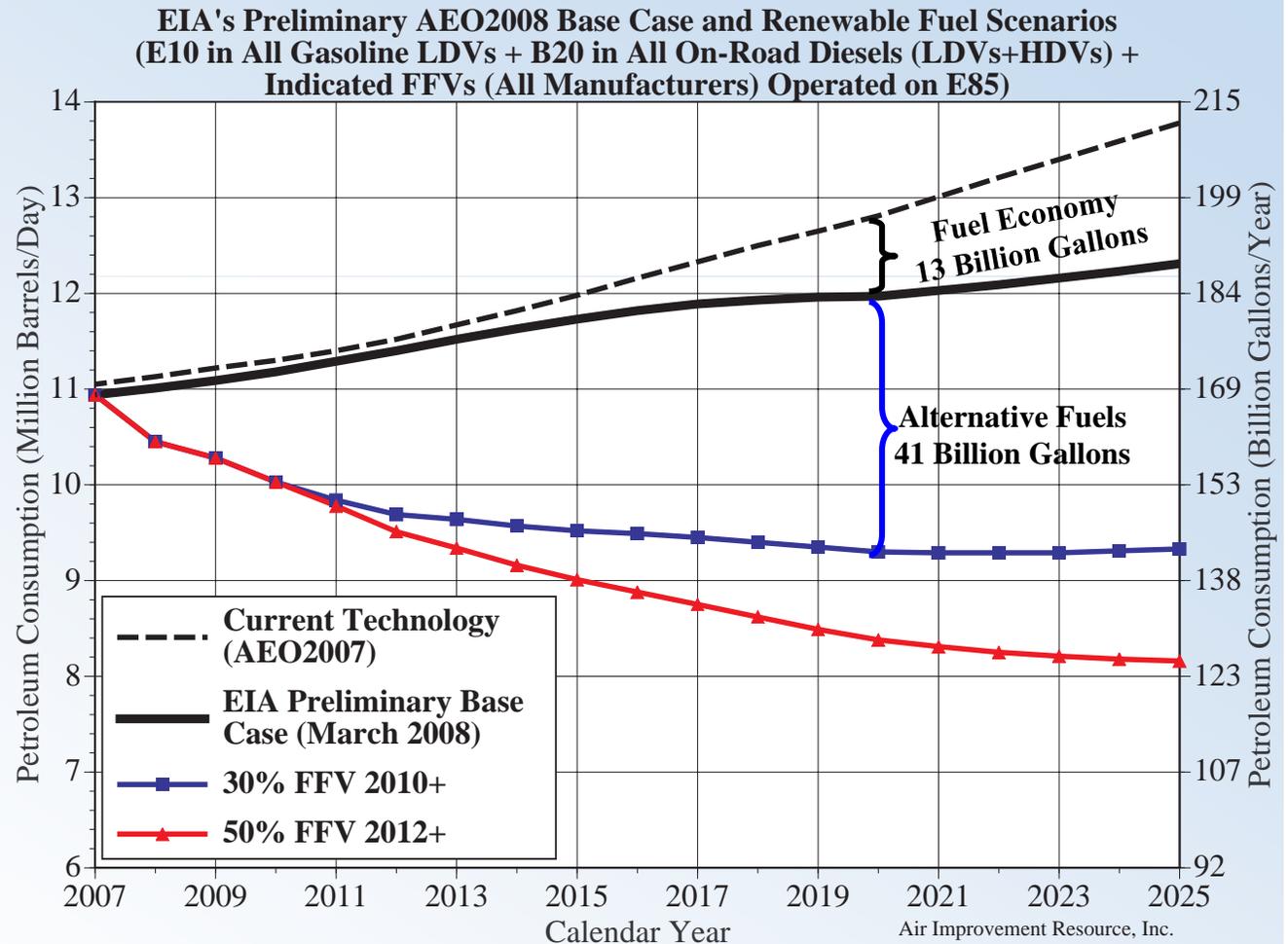
- Ultimately, we need an economy-wide response on energy.
- Economy-wide is needed to achieve scale necessary to balance cost.
- Personal transportation – passenger cars and light trucks – make up 20 percent of U.S. CO2 emissions.



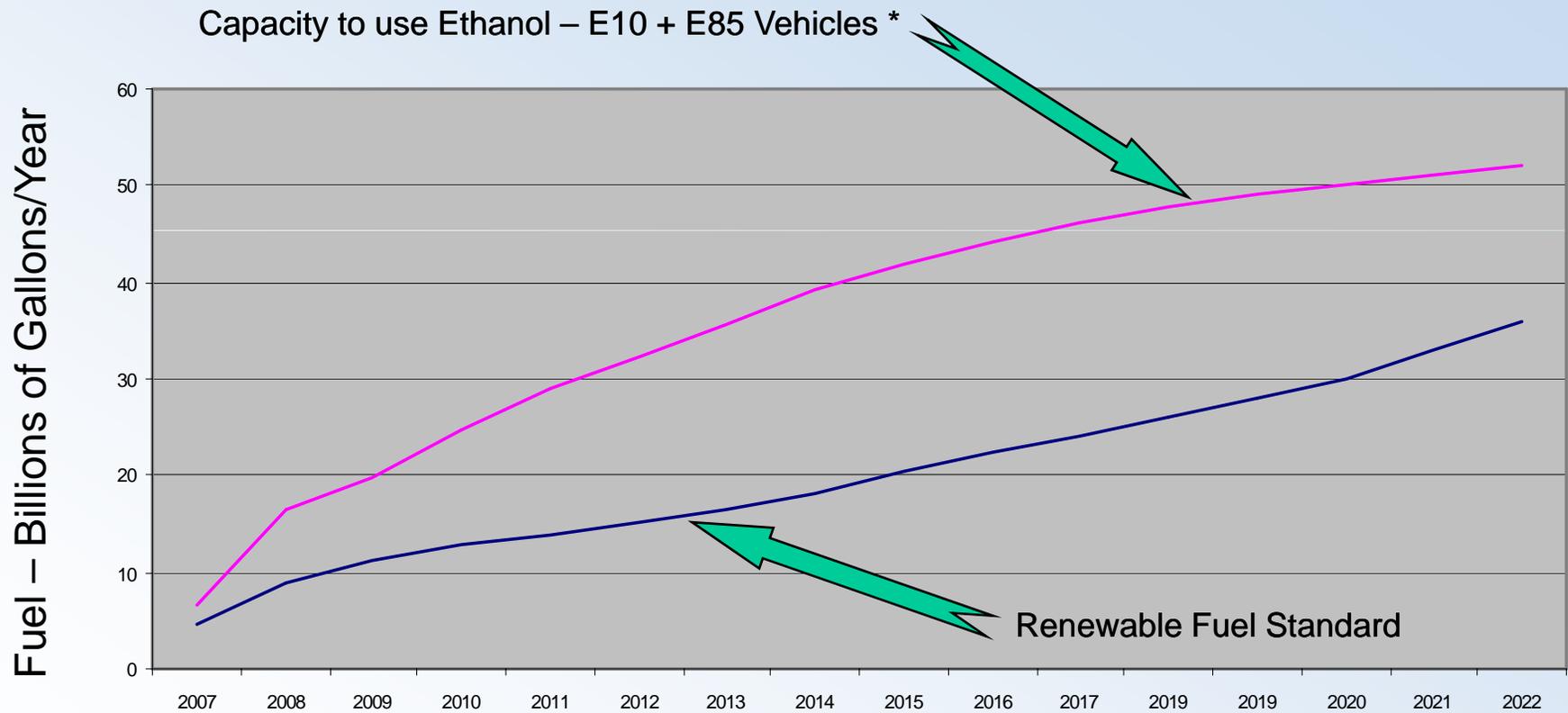
How Much Petroleum Can Biofuels Displace?



- Various bio-fuels scenarios demonstrate that petroleum consumption can be reduced
- Petroleum consumption can be reduced by over 30% compared to DOE's projections if:
 - All Gasoline is E10
 - All Diesel fuel is B20
 - 30% E85 FFV production in 2010 with 100% E85 use
 - 50% E85 FFV production in 2012 with 100% E85 use



Ethanol Use Capacity



* Air Improvement Resources, Inc.



Limitations of Renewable Fuel Standard (RFS)

- RFS does not assure alternative fuel will be preferred by the consumer over regular gasoline and diesel fuel
- RFS specifies the volume of alternative fuel to be introduced into commerce over a prescribed time, but not a mechanism to insure its use
- RFS does not ensure the de-carbonization of fuel on a lifecycle basis, within the transportation fuel pool



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Getting Consumers Excited About Bio-Fuels

- **Create Carbon Cap on Fuel – which would result in fuels being priced at a point where customers will prefer to buy it**
- **Precedent in auto industry: CAFE standards focus on performance, let the industry determine how to meet standards**
- **Carbon Cap would enable fuel industry to determine best mix of blends, markets and pricing to achieve required carbon limits**

Summary



- **Energy reduction must be addressed economy-wide and at least nation-wide to achieve necessary scale.**
- **Transportation accounts for 20% of man-made GHG emissions leaving another 80% to be addressed.**
- **Transportation sector GHG reductions will be accomplished by:**
 - **Advancing vehicle energy conversion technologies.**
 - **Introducing an expanded array of vehicles capable of using alternate fuels such as ethanol and bio-diesel.**
 - **Adding a carbon cap on liquid fuels.**
 - **Educating consumers as to how to use transportation energy more efficiently.**
- **Research necessary to reduce the cost and address other environmental and social concerns of deploying new transportation technology and alternate fuel must be completed.**

Thank You!



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