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PHEV '09

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*International Perspectives on Market Issues and Supportive Policies:
Current State of U.S. Initiatives*

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GRIDPOINT



nationalgrid

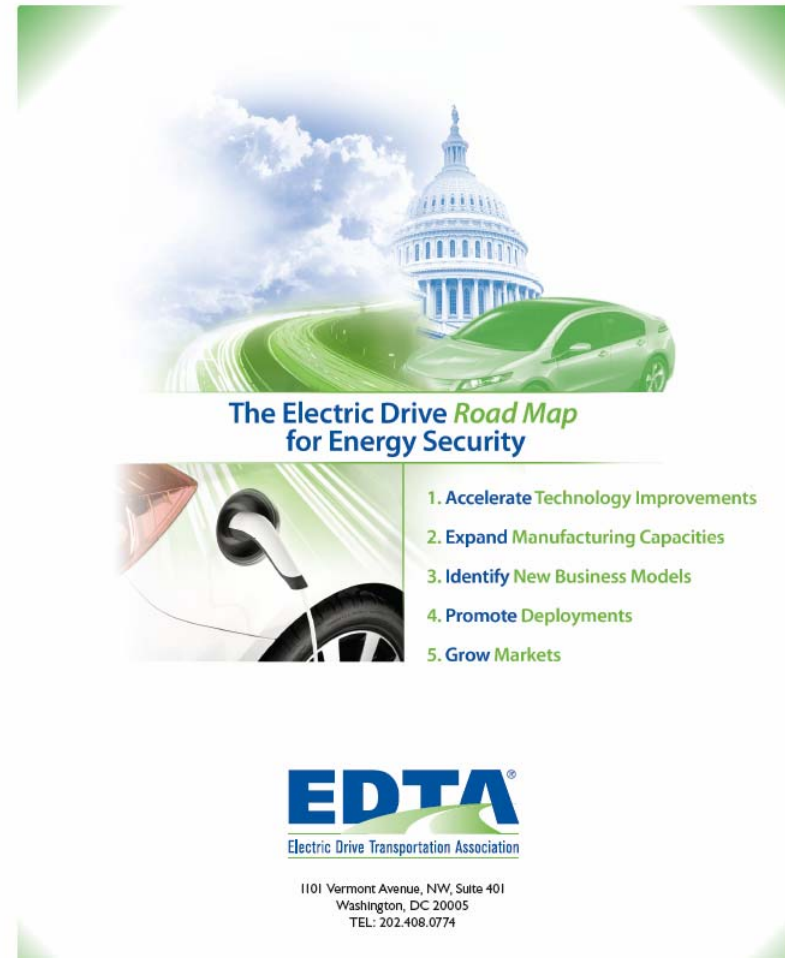


RP Associates



EDTA's Washington Policy Program

- Advance federal policies that promote electric drive vehicles, electricity as fuel and the infrastructure that link them:
 - Research Development & Deployment programs
 - Manufacturing support
 - Tax incentives for developers and consumers
 - Regulations (e.g., efficiency and emissions metrics; fleet purchasing policies)



Energy Independence and Security Act of 2007

- Increased Fuel Economy Standards – total fleet average of 35 mpg by 2020
- Transportation Electrification and Energy Storage RD&D
- Vehicle, Battery and Component Manufacturing Support – loans, grants, guarantees
- Smart Grid Research, Development and Deployment
- Federal and State Fleet Policies

Federal Support for Plug-in Vehicles and Infrastructure

> Administration Goal of 1 million plug-in vehicles on the road by 2015

> Recovery Act Funding - \$40 billion of \$787 billion went to DOE

- \$1.5 billion has been awarded for battery and battery component production, and battery recycling.
- \$500 million has been awarded for production of electric drive vehicle components, motors, and electronics.
- \$400 million has been awarded for purchase of plug in hybrids and electric vehicles for demonstrations, as well as charging infrastructure and workforce training.
- \$4.5 billion was allotted to the Office of Electricity Delivery and Energy Reliability for modernizing the grid. Smart Grid technology research, development and demonstration projects authorized in section 1304, and the federal matching fund for Smart Grid technologies in section 1306, with funds distributed through a competitive grant process. As directed in the Act, funds will also support workforce, a resource assessment and an analysis of future demand and transmission requirements, the development of interoperability standards that are critical to effective and consistent application of smart grid technologies.



Tax Policies

Plug-in Electric Drive Vehicle Credits

- Credit Amount/Criteria: Plug-in electric drive vehicles with batteries of at least 4 kWh qualify for a \$2,500 credit. An additional \$417 is provided for each additional kWh, up to \$7,500 for vehicles up to 14,000 lbs.
- Phase-out: The credit begins to phase out after 200,000 qualifying vehicles are sold in the U.S. per manufacturer.
- Low Speed and 2 & 3 Wheel Vehicles: A separate credit is available for low speed and 2&3 wheel vehicles that would provide 10% of the cost, up to \$2500 through 2011.
- Conversion kits: 10% Credit for cost of conversion, up to \$4000; available through 2011.

Infrastructure:

Temporary increase in the infrastructure credit -- The existing tax credit for refueling property (commercial and residential) is temporarily increased from a maximum of 30% (up to \$30,000) to 50% (up to \$50,000). For residential property, the maximum credit is increased to \$2000 from \$1000. The increased value is available for 2009 and 2010.

Manufacturing:

Expansion of the 30% advanced energy investment tax credit to explicitly include plug-in vehicle manufacturing investments



Research and Development

Department of Energy

Vehicle Technology programs: FY10 Budget Request for Vehicle Technologies: \$333 million (22% increase over FY09 appropriations) The largest increase, 39%, is in the Hybrid Electric Systems account for accelerating battery and power electronics research and development and expand hybrid vehicles and plug-in hybrid testing and simulation.

- Clean Cities: alt fuel vehicles and fueling infrastructure – \$25 million
- Electricity Delivery and Energy Reliability, Research and Development (Smart Grid): FY10 request essentially doubles—from \$84 m to \$174,000 million

Department of Defense

Battery and energy storage R&D: • e.g., Senate provides \$14 million for "advanced battery development program" and "hybrid engine development program" for the Army's \$186 million Combat Vehicle and Automotive Advanced Technology program.

Emerging Policies

Electric Drive Policies in Climate Change bills

New funding streams

- Allocations of emission allowance for investment in clean vehicle technology and smart grid, charging infrastructure
- Establish Clean Energy Development Authority to direct emission revenues to manufacturing and deployment (loans, loan guarantees and grants)

New regulatory requirements

- new PURPA requirements for utilities and PUCs to develop plans for electric drive vehicle and smart grid integration
- Vehicle Technology and Recharging Infrastructure Standardization

New Incentive Models

- Feebates- Fuel Performance Rebate/Fee system that would provide a rebate to purchasers of vehicles with greater fuel efficiency than the applicable CAFE standard; excise tax on manufacturers of vehicles that are less efficient than CAFE

Regulatory Drivers

- **EPA/NHTSA** – developing combined CAFE/GHG regulations for 2012-2016; considering not counting non-tailpipe emissions for early part of program
- **EPA** – poised to regulate greenhouse gases (“carbon pollution”) under the Clean Air Act
- **FERC/FCC/PUCs** – interoperability standards, for broadband infrastructure and services, cybersecurity implications, reliability and demand management, billing models
- **NIST**- [Sept 24] DOT draft report on the Smart Grid interoperability standards developed by the National Institute of Standards and Technology (NIST) -- accelerated framework for continued development of the standards for smart grid devices and systems
- **Expected Executive Order** on Federal Vehicle Fleet GHG Reductions



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