-Technology Integration Overview –

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May 2012

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Technology Integration Overview

Activities

• Clean Cities – A voluntary, locally based government/industry partnership
• Legislative and Rulemaking
• Advanced Vehicle Competitions
• Education Programs
  • Graduate Automotive Technology Education
  • Advanced Electric Drive Vehicle Education Program
Over 3.5 Billion Gallons of Petroleum Reduction since 1993
• Over 800,000 AFVs on the road
• 12,000 alternative fueling and charging stations (CC influenced >70%)
• Long term goal of 2.5B gal/year by 2020
Clean Cities Budget History

Clean Cities Budget

$ Million

25
25.5
26.8
28
26.5

FY09 FY10 FY11 FY12 FY13

Appropriation  Request

ARRA Funding
Coordination with key community and business leaders,
Identification of potential fleet and funding partners
Facilitating Infrastructure development projects,
Collecting data and tracking progress
Coalition technical training and strategy implementation,
~100 coalitions serving 78% of the US population
National Clean Fleet Partnership

April 2011 - President Announces Clean Fleets Partnership with 5 charter partners

- Challenge to top fleets across the country to adopt alt-fuels, advanced vehicles, petroleum reduction plans
- Pace-setters for others to follow

Direct Impact: The 100 largest commercial fleets account for more than 1 million vehicles. Every 2,000 vehicles converted to alternative fuel = 1M gal/year petroleum displacement.

(photo courtesy of White House)

April 2012 –
Program grown
To 20 National
CF Partners

(logos used with permission of companies represented)
Consumer Information, Outreach, and Education

- Non-biased source of VT data and information
- Fuel Economy Guide (FE.gov), Alt-Fuel Data Center (AFDC)
- On-line tools and cost calculators, other web resources
- Training for first responders and public safety officials
- Technical response service
- Public workshops, webinars, industry technical conferences
Technical & Problem Solving Assistance

- Address unforeseen permitting and safety issues,
- Identify chronic vehicle or infrastructure field problems
- Incident investigations (technology failures)
- Capture lessons learned and develop best practices

Model EVSE Permit

http://www.afdc.energy.gov/afdc/pdfs/EV_charging_template.pdf

(NREL stock photos)
Recent Awards - helped deploy over 1,500 stations and 8,500 vehicles (projects being presented & reviewed at AMR this week)

Future Directions - Community Readiness, Barrier Reduction, and Sustainable Policy Development

- Local public-private partnerships will collaborate to develop strategies and local petroleum reduction policies to deploy alternative fuel vehicles and infrastructure, streamline permitting processes, and address critical barriers.

- Sep 2011 - 16 electric vehicle projects in 24 states totaling $8.5 million were announced (currently being implemented).

Training the Next Generation of Engineers

Provide a new generation of engineers with knowledge and skills in developing and commercializing advanced automotive technologies.

- Virginia Tech took top honors!
- Year One coming to a close....

March 22, 2012
President Obama visits with Ohio State University EcoCAR2 Team after Energy Address
Training the Next Generation of Engineers

Graduate Automotive Technology Education

- Receive DOE funding for student fellowships and curriculum development.

- Each center has established a graduate engineering education program that offers courses emphasizing that center's technology specialty.

- In 2011, 7 GATE Centers awarded - $6.4 million (DOE) over 5 years

- Focus on three critical automotive technology areas: hybrid propulsion, energy storage, and lightweight materials.

Seven Centers of Excellence Awarded in 2011

- The Ohio State University - Energy Storage and Hybrid Propulsion
- University of Michigan, Dearborn - Hybrid Propulsion
- University of Colorado, Colorado Springs (UCCS) and the University of Colorado, Boulder (CU-Boulder) - Energy Storage and Hybrid Propulsion
- Purdue University - Hybrid Propulsion with emphasis on Medium/Heavy Duty
- Clemson University - Hybrid Propulsion
- Pennsylvania State University - Energy Storage
- University of Alabama, Birmingham - Lightweight Materials
Accelerate the development and production of various electric drive vehicle systems through support of educational programs to substantially reduce petroleum consumption.

- Engineering Degree & Certificate Programs
- Emergency Responder and Safety Training
- Consumer & K-12 Educational Outreach
- Developing and Providing Teaching Materials
- Training Service Personnel, Vehicle Mechanics, and Supporting Infrastructure
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Legislative & Rulemaking

Vehicle Education