Idle Reduction Technologies for Heavy-Duty Trucks

Lee Slezak
Advanced Vehicle Testing Activity
Office of FreedomCAR and Vehicle Technologies
U.S. Department of Energy

Idle Reduction Technologies for Heavy-Duty Trucks – DOE's Advanced Vehicle Testing Activity (AVTA)

GOAL: To maximize the introduction and use of idle reduction technologies in heavy-duty trucks

Objectives

1) Data collection/demonstration

   Develop objective in-use information on the performance of on-board idle reduction technologies by characterizing cost; fuel, maintenance, accessory, and engine life savings; payback; and user impressions

2) Identify and implement strategies to overcome critical cost barriers inhibiting broad market introduction

3) Conduct education and outreach to increase the knowledge, awareness, and acceptance of idle reduction technologies within the trucking industry and public at large

AVTA's Idle Reduction Technologies Activities to Date

- Extensive communications with trucking industry to ascertain issues surrounding introduction of idle reduction technologies
  - Fleets
  - Owner/Operators
  - Truck OEMs
  - idle reduction technology manufacturers

  Primary barriers: Initial cost (payback period); objective in-use data on system performance; reliability and maintenance requirements; driver education, training, and overall receptiveness
- Two workshops
  - Characterize data collection/demonstration parameters
  - Identify cost reduction strategies
- Data collection/demonstration plan
- Awards for data collection/demonstration projects
- Technology introduction plan
- Pending solicitation for truck OEM on-line installation

Idle Reduction Technologies Data Collection/Demonstration Projects

- Caterpillar, International Truck, and Cox Transfer
  - MorElectric technology
  - Electrically-driven accessories
  - Project start 4Q, FY03; Culminates 4Q, FY05

- Schneider National, Freightliner, and Webasto Thermosystems
  - Webasto Air Top cab heater (diesel-fueled air heater)
  - Webasto cab cooler (phase change cooling storage technology)
  - Project start 4Q, FY03; Culminates 2Q, FY05

- Espar, Wal-Mart, Truck manufacturer TBD
  - Espar Airtronic Bunk heater (diesel-fueled air heater)
  - DC Airco (rooftop-mounted electric A/C unit)
  - Project award expected FY04

Solicitation for Truck OEM On-line Installation

Focus: Installation of full function (heating, cooling, and electrical), on-board idle reduction technologies into heavy-duty trucks as factory-installed options

Scope:

- Technology/engineering development to cost effectively integrate systems into vehicle design and assembly process by MY06
- Full engineering documentation
- Cost savings of on-line installation versus aftermarket installation

Solicitation Parameters

- Teaming requirements – Truck OEM (lead), idle reduction technology manufacturer, and fleet (preferrably)
- $300-500K in total funding; 2-3 awards
- 50/50 cost share
- Summer 2004 release
- Award 4Q, FY04 – 1Q, FY05
- Project duration 2 years

AVTA's Future Activities for Idle Reduction Technologies

- Education and outreach (FY04-FY05)
  - Work with trade press to increase awareness and acceptance
  - Increase awareness of increased resale values of idle reduction equipped trucks
  - Outreach on successful fleet applications
  - Outreach on fuel/cost, maintenance…savings from demonstration projects
  - Health benefits
- Coordinate with Idle Elimination Manufacturers Association in addressing policy and institutional barriers (FY04-FY05)
- Extend data collection/demonstration projects (FY06, if warranted and funding available)
- Additional solicitation for on-line installation of idle reduction technologies at truck OEMs targeting year 2008 emission and fuel consumption requirements (FY06, if warranted and funding available)