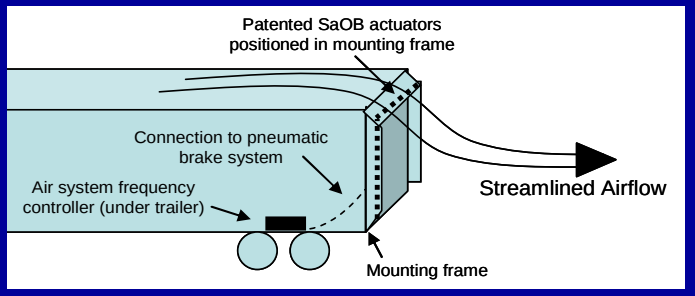
Innovative Clean Air Technologies Program (ICAT)

Project Recommendations for the Board's Consideration



ICAT
INNOVATIVE CLEAN AIR TECHNOLOGIES

ARB Support for Promising Technologies

February 26, 2009

California Environmental Protection Agency
Air Resources Board

What Has ICAT Accomplished?

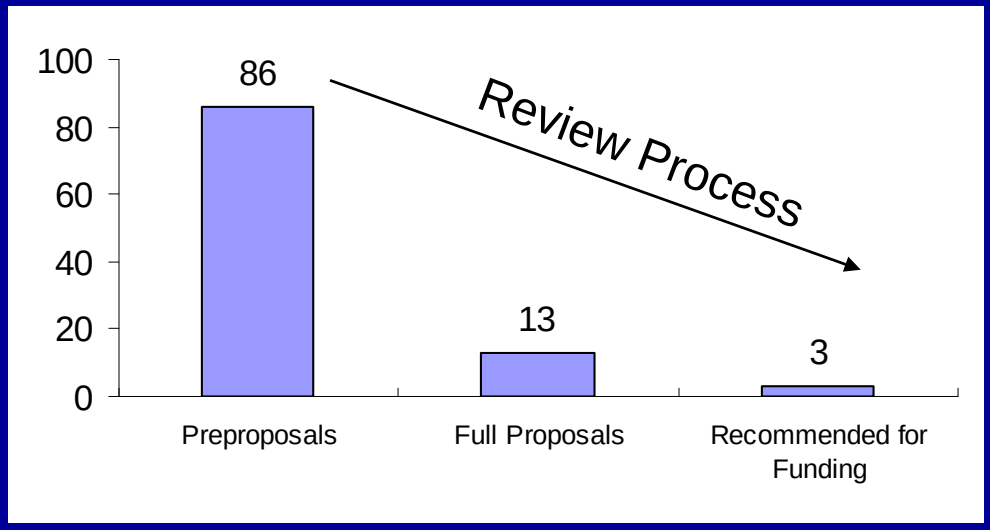
- 10 past projects have been commercialized, examples include:
  - airport electric ground support equipment
  - electrically-regenerated diesel particulate filter
  - controlling boiler NOx emissions
- 16 projects currently underway include:
  - ferry boat NOx emission control
  - outboard motor catalytic converter
  - low-cost residential solar water heaters
- ICAT has reduced 1200 tons criteria emissions
- Avoided ~60 premature deaths

Staff Examined Payback Requirement

- Board requested staff investigate ICAT receiving payback from participants (e.g., royalties)
- The 3 main issues:
  - Payback requirements would discourage applicants
  - ~18 months for legislation and implementation
  - Staff administrative costs would likely exceed income
- Staff recommends no ICAT payback requirement

Selecting 2008 Grantees

- Solicited applications focusing on greenhouse gas controls
- Received 86 pre-proposals
- Invited and evaluated 13 full-proposals
- Selected 3 for recommendation to Board



Three New ICAT Grants Recommended

- $709,904 in total ICAT support
- Over $1.6 million total project value (including applicant's contributions)
  - Emission controls for dairy digester engines
  - Active flow control for reducing truck drag
  - A hydraulic hybrid package delivery vehicle

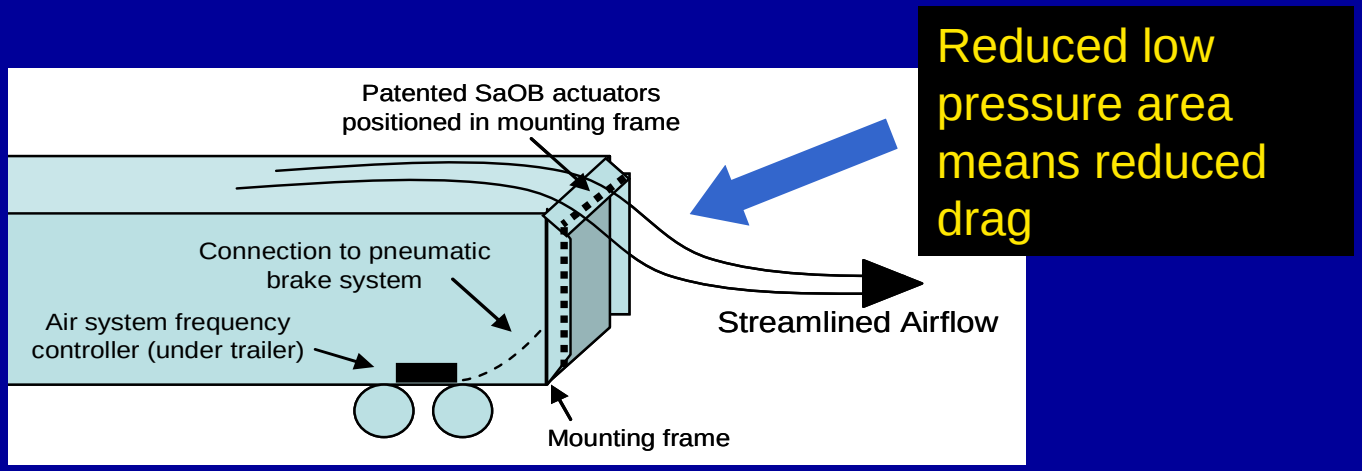
Sacramento Municipal Utility District

- "Removal Of H_2S From Biogas And NO_x From Engine Exhaust At A Dairy Digester Using Microwave Technology"
  - Supports AB32 GHG goals while meeting District NOx limits
- ICAT funding request $246,309; total project cost $595,267
- Planned demonstration at Elk Grove dairy
- Strong stakeholder interest

212 kW genset

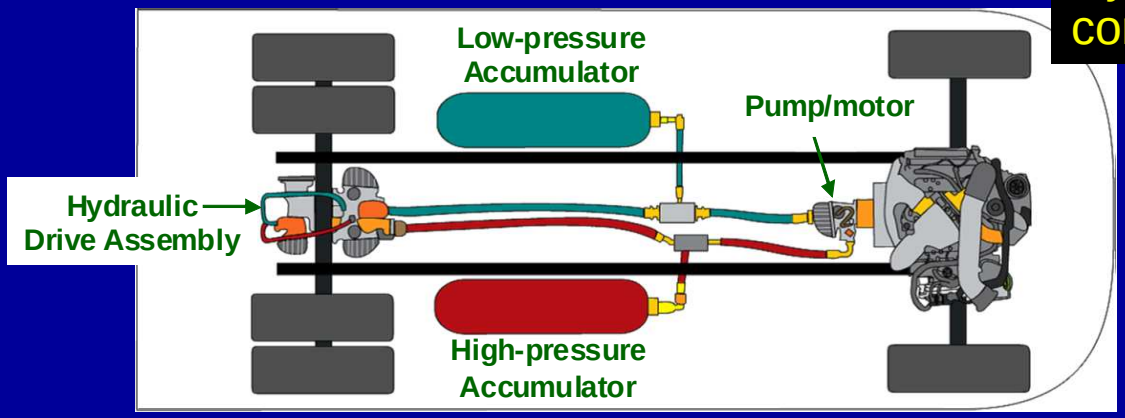
Advanced Transit Dynamics, Inc.

- "Fuel-Efficient Active Flow Control for Tractor-Trailers"
  - Supports on-highway HDV regs, AB32 goals
- Reduce drag, improve fuel economy 6-10%
- ICAT funding request $249,194; total project cost $529,759
- Project will conduct track, on-road testing



Eaton Corporation

- "Series Hybrid Hydraulic Drivetrain in a Package Delivery Vehicle"
  - Supports AB32 goals and on-highway HDV regulations
- Improves fuel economy up to 50%
- ICAT funding request $214,401; total project cost $478,802
- Demonstration in California

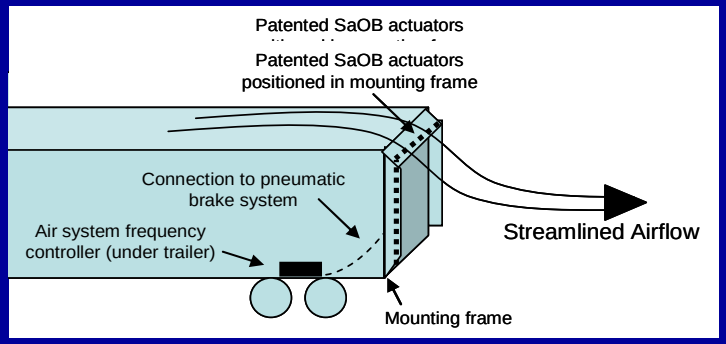


Hydraulic hybrid conceptual view

Summary

- ICAT supports new technologies
- 3 projects recommended
- Total ICAT funding request - $709,904
- Total Project Costs - $1.6 million

Digester Microwave Biogas and Exhaust Treatment



Active Flow Control for Tractor-Trailers

Hydraulic Hybrid Package Delivery Vehicle