

**Proposed Agreement between California Energy Commission
and
The Regents of the University of California, - CIEE**

Title: Undermeasured and Overlooked Fuel-Saving Opportunities in California's Light Duty Vehicles
Amount: \$150,000.00
Term: 3 months
Performing Inst: The Regents of the University of California, - CIEE
Contact: Reynaldo Gonzalez
Committee Meeting: 2/1/2011

Funding

FY	Program	Area	Initiative	Budget	This Project	Remaining Balance	
06	Natural Gas	Transportation	Fuel-Efficient Transportation Technologies	\$150,000	\$150,000	\$0	0%

Recommendation

Approve this agreement with The Regents of the University of California, - CIEE for \$150,000.00. Staff recommends placing this item on the discussion agenda of the Commission Business Meeting.

Issue

California's growing population and economic demands have increased reliance on imported petroleum use for transportation. The light-duty vehicle sector consumes over 81% of California's oil and is responsible for roughly 79% of the state's CO2 emissions. State policies call for a portfolio of options to build alternative transportation fuel use in California, and values alternative transportation fuels options that can be implemented in the near-to-long-term. Vehicle efficiency has emerged as the critical barrier to advancement of alternative transportation fuels in part because of the lower energy density. Conducting research to determine vehicle efficiency opportunities will assist in enabling alternative fueled vehicles.

Background

The federal government, the Energy Commission and other state agencies have already implemented programs to reduce Light Duty Vehicle (LDV) fuel consumption, notably through new vehicle efficiency standards, low-carbon fuel standards, and discouraging growth in vehicle miles traveled (VMT). Nevertheless, some fuel-saving opportunities may be overlooked because the benefits are not reflected in fuel economy test procedures, may apply only to existing vehicles, or have benefits unique to California. New technologies are also constantly appearing that have not yet been adopted by major vehicle manufacturers. These improvements are most likely to be cost-effective first in California because the state has consistently higher fuel prices than the national average. However, these opportunities may require further, targeted, research to make them suitable for the mass markets.

Proposed Work

CIEE will research and write a white paper on fuel-saving opportunities in LDVs. The research will focus on technologies that improve the efficiency of LDVs and in particular improvements that may not

have been fully considered owing to absence of measurements or where innovations or higher fuel prices may have made already-known strategies feasible or cost-effective. CIEE will consider technologies whose benefits may not be fully captured in current test procedures. In addition, CIEE will investigate innovations suitable for existing vehicles. Finally, CIEE will investigate energy-saving opportunities related to ancillary components and materials that may affect LDV fuel efficiency.

The research approach will consist primarily of surveying existing literature, simulations of vehicle systems, and engineering-economic calculations. Where appropriate, CIEE may perform field measurements as a means of demonstrating feasibility of the fuel-saving technology or data collection technique. CIEE will meet with researchers or observe field performance of technologies if necessary. CIEE will also estimate statewide fuel savings from these technologies so as to provide a sense of magnitude of savings potential. CIEE will take into consideration the nature of potential research funding and the likelihood that the motor vehicle industry will be able to adopt the innovations. Finally, CIEE will take into account California's unique LDV requirements, environmental goals, and other features.

Justification and Goals

This project "[will develop, and help bring to market] advanced transportation technologies that reduce air pollution and greenhouse gas emissions beyond applicable standards, and that benefit electricity and natural gas ratepayers" (Public Resources Code 25620.1.(b)(1)), (Chapter 512, Statutes of 2006)); and this project "[will develop, and help bring to market] advanced transportation technologies that reduce air pollution and greenhouse gas emissions beyond applicable standards, and that benefit electricity and natural gas ratepayers" (Public Resources Code 25620.1.(b)(1)), (Chapter 512, Statutes of 2006)).

This will be accomplished by:

- Performing the necessary research as described in the Proposed Work.
- Writing and submitting a draft report to the Energy Commission.
- Revising the draft report in response to review comments and submit a final report.
- Submitting monthly messages or conduct telephone conversations with PIER Project Manager (or designee), explaining status of project and progress to completion.