State of California
AIR RESOURCES BOARD

Designing Vehicle Retirement and Replacement Incentives for Low-Income Households

RESEARCH PROPOSAL

Resolution 15-26

July 23, 2015

Agenda Item No.: 15-6-2

WHEREAS, the Air Resources Board (ARB or Board) has been directed to carry out an effective research program in conjunction with its efforts to combat air pollution, pursuant to Health and Safety Code sections 39700 through 39705;

WHEREAS, a research proposal, number 2790-283, titled "Designing Vehicle Retirement and Replacement Incentives for Low-Income Households," has been submitted by the University of California, Los Angeles, for an amount not to exceed $483,133;

WHEREAS, the Research Division staff has reviewed Proposal Number 2790-283 and finds that in accordance with Health and Safety Code section 39701, research is needed to evaluate the light-duty vehicle market and inform ARB decision makers about the potential options for modifying ARB's incentive programs to ensure they make the best use of limited State resources, as well as provide benefits to underserved populations and disadvantaged communities; and

WHEREAS, in accordance with Health and Safety Code section 39705, the Research Screening Committee has reviewed and recommends funding the Research Proposal.

NOW, THEREFORE BE IT RESOLVED, that the Air Resources Board, pursuant to the authority granted by Health and Safety Code section 39700 through 39705, hereby accepts the recommendations of the Research Screening Committee and staff and approves the Research Proposal.

BE IT FURTHER RESOLVED, that the Executive Officer is hereby authorized to initiate administrative procedures and execute all necessary documents and contracts for the Research Proposal as further described in Attachment A, in an amount not to exceed $483,133.

I hereby certify that the above is a true and correct copy of Resolution 15-26 as adopted by the Air Resources Board.

Tracy Jensen

Tracy Jensen, Clerk of the Board

ATTACHMENT A

"Designing Vehicle Retirement and Replacement Incentives for Low-Income Households"

Background

ARB has been providing incentives to California consumers to encourage the retirement of high-polluting vehicles and to support the purchase of new near-zero and zero-emission vehicles, through the Enhanced Fleet Modernization Program (EFMP) and the Clean Vehicle Rebate Project (CVRP), respectively. ARB is currently funding several research projects to analyze the market for ZEVs, and the role that financial incentives, charging infrastructure, and other benefits (e.g., high-occupancy vehicle lane access, free parking or charging for ZEVs) play in driving the market. Additional research is needed to understand how financial incentives motivate purchase decisions in low income households, and to provide insight into the role of various market factors and how financial incentives types and/or amounts may need to be adjusted as the market for clean vehicles grows and technologies are improved. This research will help ensure that limited incentive funding makes the best use of resources while remaining effective in supporting air quality improvement, particularly in disadvantaged communities.

Objective

The objectives of this project are to understand the demographics and vehicle retirement and replacement motivations and patterns of low-income households, and to assess the effectiveness and cost-effectiveness of different policies and financial incentive program structures for optimizing adoption of advanced technology vehicles or other travel options (such as transit or car- or ride-sharing), particularly among low-income households.

Methods

The first task of this research is to conduct focus groups in the South Coast and San Joaquin Valley Air Basins, targeting households that have participated in the EFMP retirement program. Similarly, the research team will conduct focus groups with moderate income households. Based on the focus group findings, the research team will administer a survey to over 1,400 low and moderate income households who intend to purchase a vehicle within the next two years. The survey will evaluate the most effective policy and program structures to encourage retirement of high-polluting vehicles and adoption of advanced technology vehicles or lower-emission vehicle alternatives such as transit, car- or ride-sharing programs. The survey results will then be evaluated with a consumer choice model that simulates survey respondents' demand and willingness to pay for conventional and advanced technology vehicles. This model will be used to simulate the effect of alternative incentive program structures on demand for clean vehicles. Based on these results, the research team will then work with ARB and other stakeholders in the Los Angeles region to leverage pilot programs that seek to increase fleet turnover. And finally, the research team will build upon other ARB-funded research, being conducted by members of the team for this project and others, to identify and evaluate indicators of self-sustaining markets for plug-in vehicles.

Expected Results
The results of this project will provide insight into vehicle retirement and replacement motivations and patterns of low-income households, and will assess the effectiveness and cost-effectiveness of different policies and financial incentive program structures for optimizing adoption of advanced technology vehicles or other travel options (such as transit or car- or ride-sharing), particularly among low-income households.

Significance to the Board
The results of the research will be used to evaluate the light-duty vehicle market and inform ARB decision makers about the potential options for modifying ARB's incentive programs to ensure they make the best use of limited State resources, as well as provide benefits to underserved populations and disadvantaged communities.

Contractor:
University of California, Los Angeles

Contract Period:
24 months

Principal Investigators (PIs):
Dr. George M. DeShazo, Ph.D.
Dr. Evelyn A. Blumenberg, Ph.D.
Dr. Paul M. Ong, Ph.D.

Contract Amount:
$483,133

Basis for Indirect Cost Rate:
The State and the UC system have agreed to a ten percent indirect cost rate.

Past Experience with these Principal Investigators:
The research team, led by Dr. J.R. DeShazo, Dr. Evelyn Blumenberg, and Dr. Paul Ong from UCLA, has a strong research record on related projects, and has demonstrated success in delivering on other ARB-funded projects. Professor Blumenberg's research has focused on auto ownership and use among low-income households, and Professor Ong has done complementary research on minority vehicle ownership and use, and analysis of low-income households' access to credit. Professor J.R. DeShazo brings expertise with survey design and implementation and large statistical data analysis, which is complemented by his familiarity with advanced and low emission vehicles which has been demonstrated through another ARB-funded project that is nearly complete.

Prior Research Division Funding to the University of California, Los Angeles:

Year	2014	2013	2012

Funding	$ 497,281	$ 819,131	$ 400,000

BUDGET SUMMARY

Contractor: University of California, Los Angeles

Designing Vehicle Retirement and Replacement Incentives for Low-Income Households

DIRECT COSTS AND BENEFITS			
1.	Labor and Employee Fringe Benefits	$ 316,665	
2.	Subcontractors	$ 89,151	
3.	Equipment	$ 0	
4.	Travel and Subsistence	$ 0	
5.	Electronic Data Processing	$ 0	
6.	Reproduction/Publication	$ 0	
7.	Mail and Phone	$ 0	
8.	Supplies	$ 0	
9.	Analyses	$ 0	
10.	Miscellaneous	$ 36,575[1]	
	Total Direct Costs		$ 442,391
INDIRECT COSTS			
1.	Overhead	$ 40,742	
2.	General and Administrative Expenses	$ 0	
3.	Other Indirect Costs	$ 0	
4.	Fee or Profit	$ 0	
	Total Indirect Costs		$ 40,742
TOTAL PROJECT COSTS			**$ 483,133**

NOTES:

[1]Miscellaneous expenses include $34,967 for partial fee remission of tuition, fees, and graduate student health insurance which the University of California provides to all graduate students who are employed on-campus 25 percent time or greater during the academic year. Additional miscellaneous expenses are technology infrastructure fees.