State of California
AIR RESOURCES BOARD

RESEARCH PROPOSAL

Resolution 12-46

December 6, 2012

Agenda Item No.: 12-9-4

WHEREAS, the Air Resources Board (ARB) 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 2744-275, entitled "New Car Buyers' Valuation of Zero-Emission Vehicles" has been submitted by the University of California, Davis;

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

> Proposal Number 2744-275, entitled "New Car Buyers' Valuation of Zero-Emission Vehicles," submitted by the University of California, Davis, for a total amount not to exceed $575,000.

WHEREAS, the Research Division staff has reviewed Proposal Number 2744-275 and finds that in accordance with Health and Safety Code section 39701, this research project will provide an up-to-date picture of the current state of the new vehicle market specific to California (and potentially partner states) and the consumers within this market, with a particular focus on where policy interventions may facilitate the removal of barriers or enhance motivations for consumer purchases of ZEVs (both hydrogen fuel cell vehicles and plug-in electric vehicles). These research results can also help to prioritize where to make public investments with the greatest potential return, e.g. outreach, vehicle purchase incentives, or broader infrastructure network. Research Division staff recommends this proposal for approval; and

WHEREAS, the Air Resources Board will fund this proposal for a total amount $250,000; and other government agencies may co-fund this proposal for up to a combined additional $325,000 for a total contract amount of $575,000.

NOW, THEREFORE, BE IT RESOLVED that the Air Resources Board, pursuant to the authority granted by Health and Safety Code section 39703, hereby accepts the recommendations of the Research Screening Committee and Research Division staff and approves the following:

> Proposal Number 2744-275 entitled "New Car Buyers' Valuation of Zero-Emission Vehicles," submitted by the University of California, Davis, for a total amount not to exceed $575,000.

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 effort proposed herein, and as described in Attachment A, in an amount not to exceed $575,000.

I hereby certify that the above is a true and correct copy of Resolution 12-46, as adopted by the Air Resources Board.

Tracy Jensen

Tracy Jensen, Clerk of the Board

ATTACHMENT A

"New Car Buyers' Valuation of Zero-Emission Vehicles"

Background

The recently approved Advanced Clean Cars program as well as the Governor's Executive Order B-16-2012 on zero emission vehicles (ZEV) will result in an increasing number of advanced technology vehicles on the road to help California meet stringent climate stabilization and air quality targets. Other states may adopt California's light-duty vehicle emission regulations pursuant to Section 177 of the Clean Air Act. The production and sale of ZEVs in their various forms will depend on consumers' willingness to purchase these vehicles and transform the fleet. However, these new automotive product offerings mean consumers will be confronted with new vehicle technologies and they will be asked to consider new fueling behaviors; their responses to these emerging technologies in an evolving setting remain unclear.

Objective

This main objective of this research is to collect information on the vehicle purchasing process and influencing factors on new light-duty vehicle buyers in California and other states that adopt California's regulations, with a particular focus on the barriers and motivations for near- and pure-ZEVs. The results of the research project will inform policy makers about the potential areas where policies, incentives, or outreach might be effective to remove significant barriers or enhance motivations for the adoption of these vehicles.

Methods

The primary data collection method will be an on-line survey, with supplemental data collected through household in-person interviews. One thousand seven hundred households that are representative of the new car buying population in California will be recruited by a market research firm to complete the survey; only households with recent history of a new vehicle purchase will be eligible to participate. An additional 2,000 to 5,000 households in other partner states will be recruited to complete the same on-line survey subject to the availability of co-funding. The researchers will develop a single written survey to collect information related to the purchase process, factors and considerations influencing their ultimate purchase decision, social and environmental attitudes, consumer awareness and knowledge about ZEVs as well as basic household characteristics. From the survey respondents, roughly 40 volunteer households in California representing populations of special interest, such as actual purchasers of ZEVs or purchasers of larger vehicle types that are unlikely to be offered as ZEVs in the near-term, will be interviewed in-person to provide additional details on or supplemental information to their survey responses, and richer context for their purchase decisions. Subject to co-funding, at least 30 volunteer households in partner states will also be interviewed.

Expected Results

The combined survey and interview results will include measures of new car buying households' members, vehicle ownership, vehicle purchasing processes, and

fundamental barriers, e.g., lack of access to recharging for a plug-in vehicle. Results will also describe households' perception of ZEVs and ZEV-enabling technologies as measured by their attitudes and intentions toward these technologies, why people hold these intentions, and what might be done to transform the positive intentions towards ZEVs into actual purchases or the negative intentions toward ZEVs into positive ones. Subject to the availability of co-funding, these results will also improve understanding of similarities and differences in geographic regions.

Significance to the Board
Today and in the next few years, the new vehicle market will be changing rather rapidly with greater availability of ZEVs for purchase and supporting infrastructure. This research project will provide an up-to-date picture of the current state of the new vehicle market specific to California (and potentially partner states) and the consumers within this market, with a particular focus on where policy interventions may facilitate the removal of barriers or enhance motivations for consumer purchases of ZEVs (both hydrogen fuel cell vehicles and plug-in electric vehicles). These research results can also help to prioritize where to make public investments with the greatest potential return, e.g. outreach, vehicle purchase incentives, or broader infrastructure network. The South Coast Air Quality Management District and/or agencies from the Pacific Northwest, the Northeast and Mid-Atlantic regions may provide up to $325,000 in co-funding if the Board approves this project.

Contractor:
University of California, Davis

Contract Period:
21 months

Principal Investigator (PI):
Kenneth Kurani, Ph.D.

Contract Amount:
$575,000 includes $250,000 from ARB with remaining co-funding from partner agencies.

Cofunding:
An additional $325,000 is currently being pursued to allow for the same survey and interviews to be deployed in greater numbers, either in other states or within a California air basin. If additional funds are not secured for an expanded project, the existing ARB funding will still allow for conducting the survey and interviews at the California statewide level.

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

Past Experience with this Principal Investigator:
Dr. Kenneth Kurani has been researching consumers of alternative fuel vehicles for decades. Previously, he was a PI on a consumer study of converted plug-in hybrid vehicles through a Mobile Source Control Division contract for $1.8M completed in 2010.

Prior Research Division Funding to University of California, Davis:

Year	2012	2011	2010
Funding	$ 4,949,363	$ 1,394,560	$ 508,267

BUDGET SUMMARY

Contractor: University of California, Davis

"New Car Buyers' Valuation of Zero-Emission Vehicles"

DIRECT COSTS AND BENEFITS				
1.	Labor and Employee Fringe Benefits	$ 150,153		
2.	Subcontractors	$ 0		
3.	Equipment	$ 0		
4.	Travel and Subsistence	$ 16,933		
5.	Electronic Data Processing	$ 0		
6.	Reproduction/Publication	$ 0		
7.	Mail and Phone	$ 0		
8.	Supplies	$ 2,730		
9.	Analyses	$ 0		
10.	Miscellaneous	$ 59,026[1]		
	Total Direct Costs		$	228,842
INDIRECT COSTS				
1.	Overhead	$ 21,158		
2.	General and Administrative Expenses	$ 0		
3.	Other Indirect Costs	$ 0		
4.	Fee or Profit	$ 0		
	Total Indirect Costs		$	21,158
TOTAL PROJECT COSTS			**$**	**250,000**

Note that the above budget only reflects expenditures from ARB's funding. An additional $325,000 in co-funding may be secured from various partner government agencies which will be allocated accordingly based on the final scope of the expanded project.

[1] Half of the miscellaneous costs are for procuring the cross-sectional sample of California new car owning households from Decision Analyst, Inc. This vendor demonstrated the best grasp of the project and capability for providing the needed sample. Included in their costs are the incentive payments to survey respondents. The remaining miscellaneous costs are dedicated mainly to graduate student in-state fees (required by university policies when hiring graduate student personnel), with additional costs for interview transcription services and conference registration fees.