

State of California
AIR RESOURCES BOARD

RESEARCH PROPOSAL

Resolution 08-48

December 12, 2008

Agenda Item No.: 08-11-2

WHEREAS, the Air Resources Board (ARB or the 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 2668-262, entitled "Potential Design, Implementation, and Benefits of a Feebate Program for New Passenger Vehicles in California," has been submitted by the University of California, Davis;

WHEREAS, the Research Division staff has reviewed this proposal and is recommending it for approval; and

WHEREAS, the Research Screening Committee has also reviewed the proposal and recommends it for funding;

NOW, THEREFORE BE IT RESOLVED, that ARB, pursuant to the authority granted by Health and Safety Code section 39703, hereby accepts the recommendation of the Research Screening Committee and approves the following:

Proposal Number 2668-262 entitled "Potential Design, Implementation, and Benefits of a Feebate Program for New Passenger Vehicles in California," submitted by the University of California, Davis, for a total amount not to exceed \$796,641.

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 \$796,641.

I hereby certify that the above is a true and correct copy of Resolution 08-48, as adopted by the Air Resources Board.

/s/

Monica Vejar, Clerk of the Board

ATTACHMENT A

“Potential Design, Implementation, and Benefits of a Feebate Program for New Passenger Vehicles in California”

Background

The California Global Warming Solutions Act of 2006 (AB 32) specifically states that if the Pavley regulations do not remain in effect, ARB shall implement alternative regulations to control mobile sources to achieve equivalent or greater reductions of greenhouse gas emissions (Health & Saf. Code, § 38590). This research contract will contribute to ARB's evaluation of the use of a feebate program as the mechanism to secure these reductions, should that be necessary. A feebate regulation would combine a rebate program for low-emitting new vehicles with a fee program for high-emitting new vehicles. As described in the Proposed Scoping Plan (Volume I, page C-61), ARB is commissioning a study to analyze the implementation of feebates for new vehicles in California, both in place of and in addition, to the Pavley standards. This research contract is designed to fulfill the needs from this study. The study will assess elements of program design, including fee and rebate levels, point of regulation, implementation strategy, consumer response, and interaction with other AB 32 programs. In the event that ARB receives the waiver to proceed with the Pavley regulations, this research contract would refocus to assessing only the benefits and costs from implementing a feebate program in addition to the Pavley standards.

Objective

The main objective of the project will be to provide a California-specific assessment of two options for a feebate program. The first is a feebate-only program implemented in place of the Pavley standards to achieve equivalent or greater greenhouse gas reductions. The second is a feebate plus Pavley program where feebates would be implemented in combination with Pavley to achieve additional reductions beyond those expected by the Pavley program.

Methods

Researchers will provide a comprehensive study on the implementation and design options for a feebate program based on quantitative modeling of manufacturer and consumer response, past experiences of similar programs based on expert interviews and available documentation, consumer focus groups, and a statewide household survey.

Expected Results

This contract will provide a comprehensive study on the implementation and design options for a feebate program. One of the main deliverables of the project will be a quantitative model of manufacturer decision responses and consumer vehicle choice, use, and ownership for California. This project will also result in an in-depth policy analysis of a handful of specific program design options and their implications. These results will be supported by findings on perceptions and attitudes towards feebates from consumers, dealers, manufacturers, and regulators.

Significance to the Board

Numerous options exist for structuring and implementing a feebate program and the precise design of the program could result in vastly different outcomes for the program. To date, there is limited real world experience with this type of market-based program. This research contract will provide a useful quantitative tool for assessing these options and their efficacy in producing equivalent or additional reductions to the Pavley standard. In addition, this project will provide the Board with a greater understanding of how different design elements would influence the program's benefits, how the program might impact the overall AB 32 goals, and how such a program might be received by the public.

Contractor:

University of California, Davis

Contract Period:

16 months

Principal Investigator (PI):

Dr. David Greene (University of California, Davis and Oak Ridge National Lab) and Professor David Bunch (University of California, Davis)

Contract Amount:

\$796,641

Basis for Indirect Cost Rate:

The State and UC System have agreed to a ten percent indirect cost rate.

Past Experience with this Principal Investigator:

Professor David Bunch at the Graduate School of Management at the University of California, Davis previously contributed to the research team contracted to support the rulemaking process for AB 1493 (Pavley). Subsequent to that research contract, Professor Bunch is currently completing a follow-on study to further enhance his CARBITS model that simulates the California vehicle market.

Dr. David Greene has never contracted with ARB in the past, but is generally regarded as a leading expert in the field of transportation policy and has several peer-reviewed publications on feebates.

Prior Research Division Funding to University of California, Davis:

| Year | 2007 | 2006 | 2005 |
|---------|------------|--------------|-----------|
| Funding | \$925,093* | \$1,424,990* | \$780,085 |

*The California Energy Commission provided \$918,000 of this amount.

BUDGET SUMMARY

Contractor: University of California, Davis

Potential Design, Implementation, and Benefits of a Feebate Program for New Passenger Vehicles in California

DIRECT COSTS AND BENEFITS

| | | |
|-----|------------------------------------|-------------------------|
| 1. | Labor and Employee Fringe Benefits | \$ 218,478 |
| 2. | Subcontractors | \$ 516,075 ¹ |
| 3. | Equipment | \$ 0 |
| 4. | Travel and Subsistence | \$ 0 |
| 5. | Electronic Data Processing | \$ 10,000 |
| 6. | Reproduction/Publication | \$ 0 |
| 7. | Mail and Phone | \$ 0 |
| 8. | Supplies | \$ 5,000 |
| 9. | Analyses | \$ 0 |
| 10. | Miscellaneous | \$ 21,240 |

Total Direct Costs \$770,793

INDIRECT COSTS

| | | |
|----|-------------------------------------|-----------|
| 1. | Overhead | \$ 25,848 |
| 2. | General and Administrative Expenses | \$ 0 |
| 3. | Other Indirect Costs | \$ 0 |
| 4. | Fee or Profit | \$ 0 |

Total Indirect Costs \$25,848

TOTAL PROJECT COSTS **\$796,641**

¹ The majority of the subcontractor costs (58%) are for the University of California, Berkeley and University of California, Irvine campuses to provide the requisite expertise for the completion of all tasks. Roughly one-third of the Berkeley budget is dedicated to a private consulting firm for administration of the household survey (e.g. telephoning households and documenting responses) and recruitment of focus group participants. A similar service provided by the UC Berkeley Survey Research Center would be more than twice as expensive for the same sample size of 3,000 households. The remainder of the subcontractor costs is dedicated to ICF International for the services of KG Duleep, who has unique expertise and data on vehicle technology assessments to support the modeling effort.

Attachment #1

SUBCONTRACTORS' BUDGET SUMMARY

Subcontractor: University of California, Berkeley

Description of subcontractor's responsibility: The University of California, Berkeley will contribute to this project along all task activities and serve as lead for three of the seven tasks.

DIRECT COSTS AND BENEFITS

| | | | |
|-----|------------------------------------|----|----------------------|
| 1. | Labor and Employee Fringe Benefits | \$ | 226,582 |
| 2. | Subcontractors | \$ | 127,743 ¹ |
| 3. | Equipment | \$ | 0 |
| 4. | Travel and Subsistence | \$ | 13,500 |
| 5. | Electronic Data Processing | \$ | 0 |
| 6. | Reproduction/Publication | \$ | 0 |
| 7. | Mail and Phone | \$ | 448 |
| 8. | Supplies | \$ | 22,788 |
| 9. | Analyses | \$ | 0 |
| 10. | Miscellaneous | \$ | <u>5,107</u> |
| | Total Direct Costs | | <u>\$396,168</u> |

INDIRECT COSTS

| | | | |
|----|-------------------------------------|----|-----------------|
| 1. | Overhead | \$ | 28,832 |
| 2. | General and Administrative Expenses | \$ | 0 |
| 3. | Other Indirect Costs | \$ | 0 |
| 4. | Fee or Profit | \$ | <u>0</u> |
| | Total Indirect Costs | | <u>\$28,832</u> |

TOTAL PROJECT COSTS

\$425,000

¹ Ewald and Wasserman Research Consultants, LLC will be subcontracted to recruit focus group participants and administer 3,000 completed statewide household telephone surveys. Note that the UC research team will design the survey instrument and analyze/interpret the survey results.

Attachment #2

SUBCONTRACTORS' BUDGET SUMMARY

Subcontractor: University of California, Irvine

Description of subcontractor's responsibility: Professor David Brownstone of the University of California, Irvine will be assisting Professor David Bunch of the University of California, Davis with the modeling effort described in Task 4.

DIRECT COSTS AND BENEFITS

| | | | |
|-----|------------------------------------|----|-----------------|
| 11. | Labor and Employee Fringe Benefits | \$ | 19,159 |
| 12. | Subcontractors | \$ | 0 |
| 13. | Equipment | \$ | 0 |
| 14. | Travel and Subsistence | \$ | 0 |
| 15. | Electronic Data Processing | \$ | 0 |
| 16. | Reproduction/Publication | \$ | 0 |
| 17. | Mail and Phone | \$ | 0 |
| 18. | Supplies | \$ | 0 |
| 19. | Analyses | \$ | 0 |
| 20. | Miscellaneous | \$ | <u>0</u> |
| | Total Direct Costs | | <u>\$19,159</u> |

INDIRECT COSTS

| | | | |
|----|-------------------------------------|----|----------------|
| 5. | Overhead | \$ | 1,916 |
| 6. | General and Administrative Expenses | \$ | 0 |
| 7. | Other Indirect Costs | \$ | 0 |
| 8. | Fee or Profit | \$ | <u>0</u> |
| | Total Indirect Costs | | <u>\$1,916</u> |

TOTAL PROJECT COSTS

\$21,075

Attachment #3

SUBCONTRACTORS' BUDGET SUMMARY

Subcontractor: ICF International

Description of subcontractor's responsibility: KG Duleep of EEA, ICFI will supply a detailed database of vehicles offerings, attributes, redesign schedules, and use of greenhouse gas mitigation technologies.

DIRECT COSTS AND BENEFITS

| | | | |
|-----|------------------------------------|----|-----------------|
| 21. | Labor and Employee Fringe Benefits | \$ | 64,203 |
| 22. | Subcontractors | \$ | 0 |
| 23. | Equipment | \$ | 0 |
| 24. | Travel and Subsistence | \$ | 5,797 |
| 25. | Electronic Data Processing | \$ | 0 |
| 26. | Reproduction/Publication | \$ | 0 |
| 27. | Mail and Phone | \$ | 0 |
| 28. | Supplies | \$ | 0 |
| 29. | Analyses | \$ | 0 |
| 30. | Miscellaneous | \$ | <u>0</u> |
| | Total Direct Costs | | <u>\$70,000</u> |

INDIRECT COSTS

| | | | |
|-----|-------------------------------------|----|------------|
| 9. | Overhead | \$ | 0 |
| 10. | General and Administrative Expenses | \$ | 0 |
| 11. | Other Indirect Costs | \$ | 0 |
| 12. | Fee or Profit | \$ | <u>0</u> |
| | Total Indirect Costs | | <u>\$0</u> |

TOTAL PROJECT COSTS

\$70,000