

State of California
AIR RESOURCES BOARD

Resolution 06-52

December 7, 2006

Agenda Item No.: 06-11-2

WHEREAS, the Air Resources 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 proposal Number 84, entitled "Retrofitting Compact SCR and Diesel Particulate Filters to a Passenger Ferry," has been submitted by Engine, Fuel, and Emissions Engineering, Inc., in response to the 2006 Innovative Clean Air Technologies (ICAT) Program solicitation;

WHEREAS, the proposal has been independently reviewed for technical and business merit by highly qualified individuals; and

WHEREAS, the Research Division staff and the Executive Officer and Deputy Executive Officers have reviewed and recommend for funding:

Proposal Number 84, entitled "Retrofitting Compact SCR and Diesel Particulate Filters to a Passenger Ferry," submitted by Engine, Fuel, and Emissions Engineering, Inc., for a total amount not to exceed \$151,170.

NOW, THEREFORE BE IT RESOLVED, that the Air Resources Board, pursuant to the authority granted by Health and Safety Code Section 39703, hereby approves the following:

Proposal Number 84, entitled "Retrofitting Compact SCR and Diesel Particulate Filters to a Passenger Ferry," submitted by Engine, Fuel, and Emissions Engineering, Inc., for a total amount not to exceed \$151,170.

BE IT FURTHER RESOLVED, that the Executive Officer is hereby authorized to initiate administrative procedures and execute all necessary documents and agreements for the efforts proposed herein, and as described in Attachment A, in an amount not to exceed \$151,170.

I hereby certify that the above is a true and correct copy of Resolution 06-52, as adopted by the Air Resources Board.

Lori Andreoni, Clerk of the Board

ATTACHMENT A

Innovative Clean Air Technologies (ICAT) Grant Proposal:

“Retrofitting Compact SCR and Diesel Particulate Filters to a Passenger Ferry”

Background

Diesel particulate filters (DPF) and selective catalytic reduction (SCR) have been demonstrated as effective emission control technologies for use on motor vehicles to reduce particulate and NOx emissions, respectively. But these technologies have not yet been demonstrated in marine diesel applications. This project will demonstrate the use of a combined, simplified compact selective catalytic reduction (SCR) system with a catalyst-coated silicon-carbide diesel particulate filter (DPF) on a diesel engine used to propel a passenger ferry.

Objective

The objective of the project will be to demonstrate the feasibility of a combined SCR and DPF system on diesel engines used in passenger ferry applications.

Methods

In this project, a combined SCR and DPF system will be fabricated and installed on an in-service passenger ferry operated by the Blue and Gold Fleet out of Pier 41, San Francisco. The Blue and Gold ferry will be operated for about a year with the combination SCR and DPF control system. Emissions tests will be conducted at initial installation, 500 hours, 1100 hours, and at the end of about one year of operation.

Expected Results

It is expected that the project will demonstrate the feasibility of a combined SCR and DPF system to achieve significant emissions reductions in NOx and PM emissions from passenger ferries.

Significance to the Board

The demonstration of the combined SCR and DPF emissions control system for passenger ferries would advance the emissions control technologies available for marine vessels and thus support the ARB's rule-making efforts for these sources.

Applicant: Engine, Fuel, and Emissions Engineering, Inc.

Project Period: April 2007 to November 2008

Principal Investigator: Christopher Weaver

ICAT Funding: \$151,170

Co-funding: \$151,400

Past Experience with This Principal Investigator: None.

Prior ICAT Funding to 2006

Year	2005	2004	2003
Funding	0	0	0

BUDGET SUMMARY

Engine, Fuel, and Emissions Engineering Research

“Retrofitting Compact SCR and Diesel Particulate Filters to a Passenger Ferry”

<u>Direct Costs and Benefits</u>	<u>ICAT</u>	<u>Total</u>
1. Labor	\$ 58,000	\$58,000
2. Employee Fringe Benefits	\$ 19,900	\$19,900
3. Subcontractors	\$ 40,990	\$60,000
4. Equipment	\$ 0	\$12,990
5. Travel and Subsistence	\$ 0	\$ 3,500
6. Materials and Supplies	\$ 32,280	\$66,280
7. Other Direct Costs	<u>\$ 0</u>	<u>\$ 0</u>
Total	\$151,170	\$220,670
 <u>Indirect Costs</u>		
1. Overhead	\$ 0	\$ 72,900
2. Other Indirect Costs	<u>\$ 0</u>	<u>\$ 9,000</u>
Total	<u>\$ 0</u>	<u>\$ 81,900</u>
Total Project Costs	\$151,170	\$302,570