

State of California
AIR RESOURCES BOARD

Resolution 06-58

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 58, entitled "Mobile NOx and PM Aftertreatment System Field Trial," has been submitted by NxtGen Emission Controls, 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 58, entitled "Mobile NOx and PM Aftertreatment System Field Trial," submitted by NxtGen Emission Controls, Inc., for a total amount not to exceed \$200,059.

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 58, entitled "Mobile NOx and PM Aftertreatment System Field Trial," submitted by NxtGen Emission Controls, Inc., for a total amount not to exceed \$200,059.

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 \$200,059.

I hereby certify that the above is a true and correct copy of Resolution 06-58, as adopted by the Air Resources Board.

Lori Andreoni, Clerk of the Board

ATTACHMENT A

Innovative Clean Air Technologies (ICAT) Grant Proposal: **“Mobile NOx and PM Aftertreatment System Field Trial”**

Background

NxtGen is developing an innovative diesel engine aftertreatment system with applications for both new engines and retrofits. The system is designed to reduce NOx emissions by 75 percent to 90 percent using dual lean NOx traps. Emission levels achieved with the system would meet the U.S. Environmental Protection Agency’s 2010 NOx emission standard of 0.2 grams per brake horsepower. PM emissions would be reduced by 85 percent using a diesel particulate filter. In the NxtGen system, a hydrogen and carbon monoxide syngas is produced by reforming diesel fuel and engine exhaust. The syngas is used to convert NOx to nitrogen and water in the lean NOx trap.

Objective

The objective of the project will be to demonstrate the emission reduction effectiveness of the NxtGen system in on-road heavy-duty diesel trucks in California.

Methods

To demonstrate the effectiveness of the system, NxtGen will conduct a 1,000 hour field demonstration on a fleet of on-road heavy-duty diesel trucks in California. All data relevant to the performance of the system, including emissions reductions, will be collected.

Expected Results

It is expected that the effectiveness of the NxtGen system will be demonstrated in this project.

Significance to the Board

The demonstration of the effectiveness of the NxtGen system will provide the Air Resources Board (ARB) with another technology that could be used to meet the 2010 emissions standards and ARB’s retrofit requirements.

Applicant: NxtGen Emissions Controls, Inc.

Project Period: April 2007 to May 2008

Principal Investigator: Brian Kahnert

ICAT Funding: \$200,059

Co-funding: \$528,274

Past Experience with This Principal Investigator:

None.

Prior ICAT Funding to 2006

Year	2005	2004	2003
Funding	0	0	0

BUDGET SUMMARY

NxtGen Emissions Control, Inc.

“Mobile NOx and PM Aftertreatment System Trial”

<u>Direct Costs and Benefits</u>	<u>ICAT</u>	<u>Total</u>
1. Labor	\$ 0	\$247,202
2. Employee Fringe Benefits	\$ 0	\$ 30,900
3. Subcontractors	\$ 76,684	\$ 76,684
4. Equipment	\$ 0	\$ 26,565
5. Travel and Subsistence	\$ 18,000	\$ 99,466
6. Materials and Supplies	\$105,375	\$105,375
7. Other Direct Costs	<u>\$ 0</u>	<u>\$ 0</u>
Total	\$200,059	\$586,192
 <u>Indirect Costs</u>		
1. Overhead	\$ 0	\$142,141
2. Other Indirect Costs	<u>\$ 0</u>	<u>\$ 0</u>
Total	<u>\$ 0</u>	<u>\$142,141</u>
Total Project Costs	\$200,059	\$728,333

SUBCONTRACTORS' BUDGET SUMMARY

Subcontractor: Engine Control Systems Ltd.

The subcontractor will assist in the system fabrication, retrofit installation, and data collection during the field demonstration. The subcontractor will also perform work related to the dynamometer testing at the start and the end of the field trial.

<u>DIRECT COSTS AND BENEFITS</u>		<u>ICAT</u>	<u>Total</u>
1.	Labor	\$ 76,684	\$ 76,684
2.	Employee Fringe Benefits	\$ 0	\$ 0
3.	Subcontractors	\$ 0	\$ 0
4.	Equipment	\$ 0	\$ 0
5.	Travel and Subsistence	\$ 0	\$ 0
6.	Materials and Supplies	\$ 0	\$ 0
7.	Other Direct Costs	<u>\$ 0</u>	<u>\$ 0</u>
	Total Direct Costs	\$ 76,684	\$ 76,684
<u>INDIRECT COSTS</u>			
1.	Overhead	\$ 0	\$ 0
2.	Other Indirect Costs	\$ 0	\$ 0
	Total Indirect Costs	<u>\$ 0</u>	<u>\$ 0</u>
<u>TOTAL SUBCONTRACTOR COSTS</u>		\$ 76,684	\$ 76,684