

State of California
AIR RESOURCES BOARD

Resolution 08-08

January 24, 2008

Agenda Item No.: 08-1-4

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 entitled "Field Demonstration of an Advanced Composite Particulate Filter," has been submitted by GEO2 Technologies, Inc., in response to the 2007 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 entitled "Field Demonstration of an Advanced Composite Particulate Filter," submitted by GEO2 Technologies, Inc., for a total amount not to exceed \$185,000.

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 entitled "Field Demonstration of an Advanced Composite Particulate Filter," submitted by GEO2 Technologies, Inc., for a total amount not to exceed \$185,000.

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 \$185,000.

I hereby certify that the above is a true and correct copy of Resolution 08-8, as adopted by the Air Resources Board.

/s/

Lori Andreoni, Clerk of the Board

ATTACHMENT A

Innovative Clean Air Technologies (ICAT) Grant Proposal:

“Field Demonstration of an Advanced Composite Particulate Filter”

Background

GEO2 has developed an advanced composite alumina silicate material, called mullite, for use in diesel particulate filters. Use of the material in diesel particulate filters would reduce the frequency of regenerations, and permit the use of diesel particulate filters on engines that normally might not be able to use diesel particulate filters due to severe duty cycles or operating conditions.

Objective

The objective will be to demonstrate the use of the mullite filter in off-road heavy duty diesel vehicles using both active and passive regeneration systems, and in small off-road engines such as hand-held blowers or trimmers.

Methods

The GEO2 mullite filter would be installed in five off-road heavy duty diesel engines using active regeneration systems, five off-road heavy duty diesel engines using passive regeneration systems, and five small off-road engines using passive regeneration systems such as handheld blowers or alternative terrain vehicles (ATV). The vehicles using the GEO2 filters would be operated for a period of about 6 months during which durability and emissions performance would be evaluated.

Expected Results

It is expected that the project will demonstrate the feasibility of the GEO2 filter for use on off-road heavy-duty diesel vehicles and small off-road engines.

Significance to the Board

The demonstration of the GEO2 filter would provide another type of diesel particulate filter for use on heavy duty engines that would have the potential to reduce costs associated with diesel particulate filter use. The filter would also have applications for small off-road engines, engines which are currently not required to use diesel particulate filters.

Applicant: GEO2 Technologies, Inc.

Project Period: April, 2008, to November, 2009

Principal Investigator: Robert Miller

ICAT Funding: \$185,000

Co-funding: \$185,000

Past Experience with This Principal Investigator:

None.

Prior ICAT Funding to 2007

Year	2006	2005	2004
Funding	0	0	0

BUDGET SUMMARY

GEO2 Technologies, Inc.

“Field Demonstration of an Advanced Composite Particulate Filter”

<u>Direct Costs and Benefits</u>	<u>ICAT</u>	<u>Total</u>
1. Labor	\$ 0	\$ 40,000
2. Employee Fringe Benefits	\$ 0	\$ 8,000
3. Subcontractors	\$120,000	\$140,000
4. Equipment	\$ 0	\$ 0
5. Travel and Subsistence	\$ 0	\$ 10,000
6. Materials and Supplies	\$ 65,000	\$126,000
7. Other Direct Costs	<u>\$ 0</u>	<u>\$ 0</u>
Total	\$185,000	\$324,000
 <u>Indirect Costs</u>		
1. Overhead	\$ 0	\$ 46,000
2. Other Indirect Costs	<u>\$ 0</u>	<u>\$ 0</u>
Total	<u>\$ 0</u>	<u>\$ 46,000</u>
Total Project Costs	\$185,000	\$370,000

SUBCONTRACTORS' BUDGET SUMMARY

Subcontractors: Cleaire, Cummins West, Caterpillar dealer (tbd)

Cleaire will operate a chassis dynamometer that will be used for emissions testing. Cleaire will also provide engineering assistance on site, as needed, for active regeneration systems as well as support services for emissions testing. Cummins West and the Caterpillar dealer will provide system installation and removal services for the DPF systems in the field demonstrations, as well as monitoring and servicing of the systems during the field demonstrations.

<u>DIRECT COSTS AND BENEFITS</u>	<u>ICAT</u>	<u>Total</u>
1. Labor	\$ 80,000	\$100,000
2. Employee Fringe Benefits	\$ 0	\$ 0
3. Subcontractors	\$ 0	\$ 0
4. Equipment	\$ 0	\$ 0
5. Travel and Subsistence	\$ 0	\$ 0
6. Materials and Supplies	\$ 40,000	\$ 40,000
7. Other Direct Costs	<u>\$ 0</u>	<u>\$ 0</u>
Total Direct Costs	\$120,000	\$140,000
 <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>	 \$120,000	 \$140,000