

State of California
AIR RESOURCES BOARD

Resolution 05-67

December 9, 2005

Agenda Item No.: 05-12-3

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 05b-36, entitled "Cost-Effective NOx Control for Stationary Diesel Engines", has been submitted by Catalytica Energy Systems, Inc. in response to the 2005 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 05b-36, entitled "Cost-Effective NOx Control for Stationary Diesel Engines," submitted by Catalytica Energy Systems, Inc., for a total amount not to exceed \$300,000.

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 Number 05b-36, entitled "Field Demonstration of Prototype Super Boiler", submitted by the Gas Technology Institute, for a total amount not to exceed \$300,000.

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 \$300,000.

I hereby certify that the above is a true and correct copy of Resolution 05-67, as adopted by the Air Resources Board.

Lori Andreoni, Clerk of the Board

ATTACHMENT A

Innovative Clean Air Technologies (ICAT) Grant Proposal: “Cost-Effective NOX Control for Stationary Diesel Engines”

Background

Catalytica Energy Systems, Inc. (CESI) has developed a NOx reduction system for stationary diesel engines called the XEC90. The XEC90 uses a catalytic system to trap and then reduce NOx emissions from diesel engines. In the process of reducing the NOx emissions, the trap is regenerated. The XEC90 system also uses an innovative approach to converting diesel fuel to the reducing agents that are used to reduce the NOx. The XEC90 system can reduce NOx emissions from diesel engines by 90 percent or more, and at a lower cost than other technologies such as selective catalytic reduction (SCR).

Objective

The ICAT project would demonstrate the NOx emissions reductions on an in-use stationary source diesel engine.

Methods

CESI will install the XEC90 system on a 350 horsepower engine operated by Rossini Farming Company in Madera County, California. This engine is used to pump irrigation water for a grape vineyard. The system will be demonstrated on the engine for 1000 hours of engine operation. Data on emissions and fuel use will be collected during the field demonstration.

Expected Results

The project should achieve NOx emissions reductions of at least 90 percent from a baseline level of 8 grams per brake-horsepower hour.

Significance to the Board

The system would be available for use on diesel engines used in agricultural and other stationary source applications as a means of meeting permit conditions and other regulatory requirements.

Applicant: Catalytica Energy Systems, Inc.

Project Period: December 9, 2005, to December 31, 2007

Principal Investigator: Tom Morjig

ICAT Funding: \$300,000

Co-funding: \$2,239,421

Past Experience with This Principal Investigator:

None.

Prior ICAT Funding to 2005

Year	2004	2003	2002
Funding	0	0	0

BUDGET SUMMARY

Catalytica Energy Systems, Inc.

“Cost-Effective NOx Control for Stationary Diesel Engines”

Direct Costs and Benefits

	<u>ICAT</u>	<u>Total</u>
1. Labor	\$189,020	\$422,848
2. Employee Fringe Benefits	\$ 51,980	\$116,284
3. Subcontractors	\$ 54,000	\$ 88,000
4. Equipment	\$ 0	\$120,000
5. Travel and Subsistence	\$ 0	\$ 35,065
6. Materials and Supplies	\$ 5,000	\$139,820
7. Other Direct Costs	<u>\$ 0</u>	<u>\$ 0</u>
Total	\$300,000	\$922,017

Indirect Costs

1. Overhead	\$ 0	\$1,617,404
2. Other Indirect Costs	<u>\$ 0</u>	<u>\$ 0</u>
Total	<u>\$300,000</u>	<u>\$1,617,404</u>

Total Project Costs	\$300,000	\$2,539,421
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