

**State of California  
AIR RESOURCES BOARD**

Resolution 01-4  
January 25, 2001

Agenda Item No.: 01-01-2

**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 00-01-03, entitled "An Energy-Efficient Afterburner That Can Eliminate Ninety-nine Percent of Woodsmoke Pollution", has been submitted by Grahn Industries in response to the 2000 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 00-01-03 entitled "An Energy-Efficient Afterburner That Can Eliminate Ninety-nine Percent of Woodsmoke Pollution", submitted by Grahn Industries, LLC, for a total amount not to exceed \$123,300.

**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 00-01-03, entitled "An Energy-Efficient Afterburner That Can Eliminate Ninety-nine Percent of Woodsmoke Pollution", submitted by Grahn Industries, LLC, for a total amount not to exceed \$123,300.

**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 \$123,300.

I hereby certify that the above is a true and correct copy of Resolution 01-4, as adopted by the Air Resources Board.

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Marie Kavan, Clerk of the Board

## ATTACHMENT A

### INNOVATIVE CLEAN AIR TECHNOLOGIES (ICAT) PROGRAM PROPOSAL

#### “An Energy-Efficient Afterburner That Can Eliminate Ninety-nine Percent of Woodsmoke Pollution”

##### Background

Smoke from wood-burning stoves and fireplaces is a major part of the particulate matter in the ambient air in the winter. New or relocated wood-burning stoves must meet emission standards set by the U.S. Environmental Protection Agency. However, there are no standards for new fireplaces or for existing stoves or fireplaces, and there is no recognized control hardware for retrofitting stoves or fireplaces.

##### Objective

The applicant’s objectives are to build multiple units of its prototype smoke-destruction device, install them in domestic wood stoves and fireplaces, monitor the installations for effectiveness, durability, and ease of use, and use the observations to optimize the device before its commercial offering.

##### Expected Results

The project should establish the utility of the first effective and cost-efficient PM control device for retrofit on wood-burning stoves and fireplaces.

##### Significance to the Board

The device to be tested in the project could enable creating a control measure for an important source of particulate matter.

##### Proponent:

Grahn Industries, LLC

##### Project Period:

15 months

##### Principal Investigator:

Dennis Grahn, Ph.D

##### ICAT Funding:

\$123,300

##### Cofunding:

Grahn Industries \$ 206,300

**Basis for Indirect Cost Rate:** No ICAT funds are requested for indirect costs.

##### Past Experience with this Principal Investigator:

Although staff may not have any prior experience with the PI, the extent of review that each ICAT proposal is subjected to provides a sufficient level of confidence for staff to recommend the proposal for an ICAT award. The ICAT evaluation process includes reviews by five external technical and four external business advisors, as well as internal reviewers from Mobile Source Control and Operations Divisions, Stationary Source Division, Research Division, and the Executive Office.

**Prior ICAT Funding to Grahn Industries:**

Year	1999	1998	1997
Funding	\$ 0	\$ 0	\$ 0

# BUDGET SUMMARY

Grahn Industries, LLC

An Energy-Efficient Afterburner That Can Eliminate 99 Percent of Woodsmoke Pollution

<b><u>DIRECT COSTS AND BENEFITS</u></b>		<b><u>ICAT</u></b>	<b><u>TOTAL</u></b>
1.	Labor and Employee Fringe Benefits	\$ 65,000	\$ 156,000
2.	Subcontractors	\$ 24,000	\$ 48,000
3.	Equipment	\$ 0	\$ 16,000
4.	Travel and Subsistence	\$ 3,200	\$ 6,400
5.	Electronic Data Processing	\$ 0	\$ 0
6.	Reproduction/Publication	\$ 100	\$ 200
7.	Mail and Phone	\$ 500	\$ 1,000
8.	Supplies	\$ 7,000	\$ 14,000
9.	Analyses	\$ 23,500	\$ 51,000
10.	Miscellaneous	\$ 0	\$ 0
	Total Direct Costs	\$123,300	\$ 292,600
<b><u>INDIRECT COSTS</u></b>			
1.	Overhead	\$ 0	\$ 29,000
2.	General and Administrative Expenses	\$ 0	\$ 8,000
3.	Other Indirect Costs	\$ 0	\$ 0
4.	Fee or Profit	\$ 0	\$ 0
	Total Indirect Costs	\$ 0	\$ 37,000
<b><u>TOTAL PROJECT COSTS</u></b>		<b><u>\$123,300</u></b>	<b><u>\$329,600</u></b>