

State of California  
AIR RESOURCES BOARD

Resolution 01-44

October 25, 2001

Agenda Item No.: 01-8-2

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 01-11, entitled "A Plan to Retrofit Three Diesel Generators with the Rypos/Bekaert System", has been submitted by Rypos, Inc., in response to the 2001 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 01-11, entitled "A Plan to Retrofit Three Diesel Generators with the Rypos/Bekaert System", submitted by Rypos, Inc., for a total amount not to exceed \$100,000.

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 01-11, entitled "A Plan to Retrofit Three Diesel Generators with the Rypos/Bekaert System", submitted by Rypos, Inc., for a total amount not to exceed \$100,000.

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 \$100,000.

I hereby certify that the above is a true and correct copy of Resolution 01-44, as adopted by the Air Resources Board.

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Marie Kavan, Clerk of the Board

## ATTACHMENT A

Innovative Clean Air Technologies (ICAT) Grant Proposal:

### **“A Plan to Retrofit Three Diesel Generators with the Rypos/Bekaert System”**

#### **Background**

Retrofit control technologies are needed for particulate matter (PM) emitted from stationary diesel engines. In particular, there is a need for controls that can operate effectively and economically when the engine is working at low loads and the exhaust is not hot enough for passive regeneration of PM traps. Devices that can regenerate (destroy collected soot) when the exhaust is cool have been developed, but they consume considerable fuel in raising the exhaust temperature to a suitable degree.

#### **Objective**

Rypos would retrofit its sintered metal, electrically regenerated PM trap system onto three stationary or portable diesel engines in commercial service. The target engine sizes are 100 kw, 200 kw, and 400 kw. Performance of the retrofit systems would be measured versus purposefully varied load and during three months of actual operation. Goals for the project would be at least 75 percent average PM removal, regeneration independent of exhaust temperature, back-pressure less than 40 inches of water, and additional fuel use less than two percent.

#### **Methods**

Rypos will retrofit its trap on three in-use stationary engines with outputs of 100 kw, 200 kw, and 400 kw. Rypos will monitor the engine loads, exhaust temperatures, trap back-pressures, CO and NO<sub>x</sub> concentrations, exhaust opacities, and PM emission rates for three months. The opacity and PM measurements will be compared to data taken without the trap inline.

#### **Expected Results**

A successful project would demonstrate the practical utility of a PM control technology with widespread applicability for stationary engines.

#### **Significance to the Board**

The ARB needs to verify performance of control technologies for retrofit on stationary diesel engines. The staff intends to propose “airborne toxic control measures” that will require retrofitting controls that have been verified by ARB.

**Applicant:** Rypos, Inc.

**Project Period:** 9 months

**Principal Investigator:** Frank DePetrillo

**ICAT Funding:** \$100,000

**Cofunding: \$116,560**

Rypos \$40,000  
Bekaert Fibre Technologies \$76,560

**Past Experience with This Principal Investigator: None.**

Although staff does not have any prior experience with the PI, the extent of review of ICAT proposals 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 Rypos, Inc.:**

Year	2000	1999	1998
Funding	\$ 0	\$ 0	\$ 0

## BUDGET SUMMARY

Rypos, Inc.

### A Plan to Retrofit Three Diesel Generators with the Rypos/Bekaert System

<u>Direct Costs and Benefits</u>	<u>ICAT</u>	<u>Total</u>
1. Labor	\$ 0	\$ 45,690
2. Employee Fringe Benefits	\$ 0	\$ 5,870
3. Subcontractors	\$ 40,000	\$ 40,000
4. Equipment	\$ 0	\$ 40,000
5. Travel and Subsistence	\$ 10,000	\$ 20,000
6. Materials and Supplies	\$ 20,000	\$ 35,000
7. Other Direct Costs	<u>\$ 0</u>	<u>\$ 0</u>
Total	\$ 70,000	\$186,560
 <u>Indirect Costs</u>		
1. Overhead	\$ 13,500	\$ 13,500
2. Other Indirect Costs	\$ 16,500	\$ 16,500
Total	<u>\$ 30,000</u>	<u>\$ 30,000</u>
 <b>Total Project Costs</b>	 <b><u>\$100,000</u></b>	 <b><u>\$216,560</u></b>