



Overview

Biocube LLC, a developer of biofiltration systems that eliminate odors from municipal wastewater plants, was founded by Herbert J. Ego in March 2000. First-year sales totaled some \$1.4 million, a figure that is estimated to grow to \$3.5 million to \$4 million in revenues in 2004 — more than doubling, and close to tripling, in just four years.

The company this month was named the 2004 Small Business Exporter of the Year for Western New York by the U.S. Small Business Administration.

Based in Victor, Biocube has 10 employees and more than 300 customer installations around the world. It currently designs and sells modular biofiltration systems for three levels of airflow ranging from 50 cubic feet per minute (cfm) to 10,000 cfm of foul air. Smaller systems sell for an average of \$42,000, while larger systems can sell for more than \$200,000 each.

Roughly 85 to 90 percent of Biocube's customers are municipal wastewater-treatment plants, many of them in the southeastern United States. Wastewater odors tend to be a year-round problem in the south, with its warmer climate. Among the company's largest customers is an undisclosed municipality outside Phoenix, which recently placed a \$625,000 order.

Biocube's systems are used to remove harmful gases — primarily hydrogen sulfide — from the wastewater treatment plants. Hydrogen sulfide, or H₂S, is a foul-smelling and hazardous gas that results from the natural decay of organic compounds. Wastewater plants commonly use chemical scrubbers and granulated carbon canisters to reduce the harmful gases. Today, utilities are looking for ways to treat these gases in a way that will reduce operating costs, eliminate hazardous wastes, and reduce maintenance requirements.

Biocube's products achieve all of these objectives through the use of environmentally friendly materials and a patented pre-engineered tray design. The system uses naturally occurring microbes to break down contaminants biologically into non-hazardous or less-offensive by-products, such as carbon dioxide and water.

The company's main focus is the removal of H₂S gas in wastewater treatment and volatile organic compound (VOC) markets. It aims to make the name Biocube synonymous with the word biofilter in these two key market segments.

History

The technology for the Biocube biofiltration system was originally developed for the environmental-remediation market. Rotron, a division of EG&G, developed the technology in conjunction with the federal Department of Energy under a special technology development grant. Rotron was familiar with soil-vapor extraction (SVE) through its leading position in the blower market. Both parties contributed \$1 million to the development effort, resulting in the first Biocube designs.

In the early 1990s, the initial product was successful in removing gasoline by-products from contaminated soil. Unfortunately, the product was not as successful as planned when scaled up for larger applications. Rotron recognized that the SVE market opportunity for the Biocube system was limited, and wisely looked for other applications.

In 1994, Rotron began test marketing the Biocube as an alternative to in-ground biofilters used in the wastewater-treatment industry. The product proved to be very effective at removing hydrogen sulfide gas from wastewater airstreams, and offered a number of advantages over in-ground systems and chemical scrubbers. The company commercialized the product and began actively selling it in 1996 and 1997.

In 1997, EG&G decided to sell Rotron to Ametek, which was interested primarily in Rotron's line of blower and fans. Product development continued under Ametek and was aimed at improving the tray design and structural integrity of the system.

After several years, Ametek decided to sell the business because the waste-treatment industry was no longer in the company's strategic plans. Ametek approached Honeoye Falls-based Graver Technologies to gauge its interest in buying the business. Graver declined, but its general manager, Herbert Ego, was interested in starting his own company.

In March 2000, Ego — who, prior to Graver, had worked at Eastman Kodak Co. for 13 years — purchased all Biocube assets and formed a new company, Biocube LLC.

Situation Analysis

Biocube in the next three years seeks to expand its markets, beyond municipalities and beyond the United States. It aims to increase its annual revenues to \$10 million by 2007.

The company is looking to expand beyond its municipal customer base, into the industrial market. Target industries include pulp and paper mills, cosmetic and perfume companies, commercial bakeries, food and beverage companies, including breweries, and pharmaceutical firms.

Biocube also is looking to expand its international business. Currently, some 30 to 35 percent of the company's shipments are sent overseas. International customers include the City of Riyadh, Saudi Arabia; the Jordanian Ministry of Water (the systems are all near the ancient city Petra) the City of Lima, Peru; and the City of Durban, South Africa

In recognition of its efforts overseas, the company this month was honored as the 2004 Western New York Small Business Exporter of the Year by the U.S. Small Business Administration.

Most of the firm's shipments are made during the Spring, as municipalities prefer to install the equipment before the higher temperatures, and the noxious odors that come with summer conditions. Sales slow down in the late summer months and again in the winter — a fact that is driving Biocube's expansion south of the Equator, where December, January, and February are the summer months. The company is targeting South America, Australia and New Zealand in that effort.

Biocube also is in talks to expand business to Eastern Europe, where municipalities are expected to spend millions of dollars over the next decade building and upgrading wastewater-treatment plants in preparation of joining the European Union.

Hungary alone is expected to install some 200 biofiltration systems in wastewater plants over the next 10 years. Biocube hopes to be part of those efforts.

The company also is working with partners to develop a larger biofiltration system — one rated to treat 20,000 to 40,000 CFM, (*defined earlier*) of air. Biocube currently is in talks with officials at Cornell University, Rensselaer Polytechnic Institute, Rochester Institute of Technology and University of Rochester to assist in the development such a product.

Conclusion

Biocube is very well positioned in the odor-control marketplace. It leads all U.S. biofiltration companies in terms of installations with more than 300 operating sites. Increasing worldwide market acceptance of biofiltration technology as a preferred method of H₂S removal will help keep sales strong.

Biocube was recently able to successfully acquire much needed investment capital through local Rochester private investors. Access to capital will be important to the company's ability to fund its growth. These local angel investors are also contributing to the company by providing consulting and expertise. GRE was helpful to Biocube, LLC in locating and preparing for meetings with potential investors.

With its patented technology, success in attracting venture capital, outreach to new markets, and projected increase in revenues through 2007, Biocube is positioned to grow in Greater Rochester.