ADVANCED ENERGY INDUSTRIES INC
Form 10-K/A
July 11, 2005

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UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

FORM 10-K/A

(Mark One)

þ ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934.

For the fiscal year ended December 31, 2004.

o TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934.

For the transition period from _____ to _____.

Commission file number: **000-26966**

ADVANCED ENERGY INDUSTRIES, INC.

(Exact name of registrant as specified in its charter)

Delaware	**84-0846841**
(State or other jurisdiction of incorporation or organization)	(I.R.S. Employer Identification No.)
1625 Sharp Point Drive, Fort Collins, CO	**80525**
(Address of principal executive offices)	(Zip Code)

Registrant s telephone number, including area code: **(970) 221-4670**

Securities registered pursuant to Section 12(b) of the Act:

None

Securities registered pursuant to section 12(g) of the Act:

Common Stock, $0.001 par value

(Title of class)

Indicate by check mark whether the registrant: (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes þ No o.

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K is not contained herein, and will not be contained, to the best of registrant s knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K. o

Indicate by check mark whether the Registrant is an accelerated filer (as defined in Exchange Act Rule 12b-2). Yes þ No o.

The approximate aggregate market value of voting and non-voting common stock held by non-affiliates of the registrant was $210.8 million as of June 30, 2004.

32,767,792

(Number of shares of Common Stock outstanding as of March 24, 2005)

DOCUMENTS INCORPORATED BY REFERENCE

Document	Incorporated By Reference In Part No.
Portions of Advanced Energy Industries, Inc. definitive proxy statement for its 2005 Annual Meeting of Stockholders to be held on May 4, 2005	III

EXPLANATORY NOTE

Advanced Energy Industries, Inc. (the Company) is filing this Amendment No. 1 to its Annual Report on Form 10-K for the year ended December 31, 2004 (which was filed with the Securities and Exchange Commission on March 31, 2005) to (a) include a new report of Grant Thornton LLP, our independent registered public accounting firm, with respect to the Company s internal control over financial reporting and our management s assessment of the Company s internal control over financial reporting, (b) include an updated, unqualified opinion by Grant Thornton LLP on the financial statements included in our Form 10-K relating to the year ended December 31, 2004, and (c) clarify information included under Controls and Procedures (Item 9A), and (d) expand disclosures in Business (Item 1), Management s Discussion and Analysis of Financial Condition and Results of Operations (Item 7) and the notes to the financial statements included in our Form 10-K (Item 8). No changes have been made to the Company s consolidated balance sheets and statements of operations, stockholders equity and comprehensive loss or cash flows.

For convenience and ease of reference, we are filing the amended 2004 Annual Report in its entirety. This Amendment No. 1 does not reflect events occurring after the original filing of the 2004 Annual Report or modify or update the disclosures therein in any way other than as described above.

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PART I

ITEM 1. BUSINESS

Overview

We incorporated in Colorado in 1981 and reincorporated in Delaware in 1995. In 1995, we effected the initial public offering of our Common Stock. Unless the context otherwise requires, as used in this Form 10-K/A, references to Advanced Energy refer to Advanced Energy Industries, Inc., and references to the Company , we , us or our re Advanced Energy and its consolidated subsidiaries. Our executive offices are located at 1625 Sharp Point Drive, Fort Collins, Colorado 80525, and our telephone number is 970-221-4670. Our website address is www.advanced-energy.com. We make available, free of charge on our website, our Annual Report on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K and all amendments to these reports as soon as reasonably practicable after filing such reports with, or furnishing them to, the Securities and Exchange Commission (the SEC). Such reports are also available at www.sec.gov.

We design, manufacture and support a group of key components and subsystems primarily for vacuum process systems. Our primary products are complex power conversion and control systems. Our products also control the flow of liquids into the process chambers for semiconductor equipment and provide thermal control and sensing within the chamber. Our customers use our products in plasma-based thin-film processing equipment that is essential to the manufacture of, among other things:

Semiconductor devices for electronics applications;

Flat panel displays for hand-held devices, computer and television screens;

Compact discs, DVDs and other digital storage media;

Optical coatings for architectural glass, eyeglasses and solar panels; and

Industrial laser and medical applications.

We also sell spare parts and repair services worldwide through our customer service and technical support organization.

We market and sell our products primarily to large, original equipment manufacturers (OEMs) of semiconductor, flat panel display, data storage and other industrial thin-film manufacturing equipment. Sales to customers in the semiconductor capital equipment industry comprised 60% of our sales in 2004, 59% in 2003 and 68% in 2002. We sell our products primarily through direct sales personnel to customers in the United States, Europe and Asia, and through distributors in regions both inside and outside the United States. International sales represented 47% of our sales in 2004, 53% in 2003 and 40% in 2002. Additionally, many of our products sold domestically are placed on systems shipped overseas by our customers.

Products

Our major products fall into four categories: Power, Flow Control, Thermal Instrumentation and Source Technology. Our products are designed to improve productivity and lower the cost of ownership for our customers.

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POWER

Our power systems include direct current (DC), high power, low and mid frequency, and radio frequency (RF) power supplies, matching networks and RF instrumentation. Our power systems refine, modify and control the raw electrical power from a utility and convert it into power that is uniform, predictable and repeatable. Our power systems are primarily used by semiconductor and flat panel display manufacturers in the following applications: physical vapor deposition; chemical vapor deposition; reactive sputtering; electroplating; plasma vacuum processes and bias; oxide, poly and conductor etch; carbon dioxide laser excitation; data storage; and architectural glass.

FLOW CONTROL

Our flow control products include thermal mass flow controllers (MFCs), pressure-based MFCs, liquid MFCs, liquid vapor delivery systems, pressure control systems and ultrasonic control systems. Our flow control products control or monitor the flow of high-purity liquids, liquid vapor, and gases encompassing a wide range of input pressures. Our flow control products are primarily used in semiconductor applications, fiber optics, safe delivery system applications, chemical vapor deposition and silica industries.

THERMAL INSTRUMENTATION

Our thermal instrumentation products, primarily used in the semiconductor industry, provide thermal management and control solutions for applications where time-temperature cycles affect productivity and yield. They are used in physical vapor deposition, chemical vapor deposition, rapid thermal processing and other semiconductor applications requiring non-contact temperature measurement, chemical mechanical polishing, track and lithography.

SOURCE TECHNOLOGY

Our source technology products include plasma and ion beam sources which are used in the direct deposition of thin films of diamond-like carbon, ion-assisted deposition, ion beam etching, optical coating, industrial coating, pre-cleaning and chamber clean. Our plasma-source platform is a complete system, including a remote plasma source, a power supply and an active matching network.

OTHER PRODUCTS

We also offer DC-to-DC converters specifically designed to power low voltage, high-current microprocessors, application-specific integrated circuits, logic and memory chips and servers.

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The following summarizes our portfolio of product platforms:

	Products	Product Description	Major Process Applications
POWER	**Direct Current** DC Pulsing Product Suite, E-Chuck System, E Wave , MDX Series, MDX II Series, Pinnacle ® 3000, Pinnacle® Diamond, Pinnacle® Plus Series, Pinnacle® Series, Summit Series **High Power** Astral® Series, Crystal® **Low and Mid Frequency** LFGC Series, LFGS Series, PDX® Series, PE and PE II Series, RAS Split Inductor **RF and High Frequency** Apex® Series, CESAR Series, HPG Series, HFV Variable Frequency Generators, RFG Series, Ovation Series **Match Networks** VarioMatch Series, Navigator Match Network Series **RF Instrumentation** Z Scan® Sensors	Power conversion and control systems	CVD PECVD HDPCVD PVD Reactive sputtering Vacuum sputtering Etch Oxide Poly Conductor Ion implantation Plasma vacuum process systems Electroplating Wafer handling Bias CO_2 laser excitation Flat panel display Data storage Architectural glass
FLOW CONTROL	**Mass Flow Controllers** Aera® FC-780CHT Series, Aera® FC-790 Series, Aera® FC-900 Series, Aera® FC-1000 Series, Aera ® FC-7700 Series, Aera® FC-7800 Series, Aera® FC-D980 Series, Aera® FC-P2000 Series, Aera® FC-PA780 Series Digital, Aera® LX-1200/1200C	Digital and analog MFCs, large capacity thermal vaporizer and delivery system, compact thermal vaporizer and delivery system, thermal refill and vaporizer recharge system, ultrasonic	Semiconductor processes Fiber optics Safe delivery systems Vaporized liquids Silica industries CVD diffusion

	Series, Aera® PrimAera® Series Digital flow controller		
	Thermal Vaporizer Systems Aera® ADS-L200, Aera® AS Series, Aera® GS-440A		
	Mass Flow Meters Aera® USF100 A-G Ultra-Sonic, Aera® Mass Flow Meter Series , EMCO® Industrial Flow Meters		
THERMAL INSTRUMENTATION	**Thermal Sensing Systems** Sekidenko OR1000F Optical Fiber Thermometer, Sekidenko OR2000F Optical Fiber Thermometer	Non-contact temperature sensing systems	RTP PVD CVD CMP Track Lithography
SOURCE TECHNOLOGY	**Ion Beam Sources** LIS Series **Plasma Source** Xstream with Active Matching Network , Litmas	Direct deposition of thin films, ion-assisted deposition	CVD chamber clean Deposition Thin films Etch Optical coating Industrial coating
OTHER PRODUCTS	**DC-to-DC Converters** HDS High-Density 1.25 V 11 A, HDS High-Density 1.5 V 36 A, HDS High-Density 2.5 V 43 A, HDS High-Density 3.3 V 34 A, HDS High-Density 48 to 12 V, HDS High-Density 5 V 18 A, VRMs, MVRs	Low voltage/high current power conversion	DC-to-DC conversion

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Markets, Applications and Customers

MARKETS

Most of our sales have historically been to customers in the semiconductor capital equipment industry. Sales to customers in this industry represented 60% of our sales in 2004, 59% in 2003 and 68% in 2002. Our power, flow control, thermal instrumentation, source technology as well as other products are also used in the flat panel display, data storage and advanced product applications markets. Following is a discussion of the major markets for our products.

SEMICONDUCTOR CAPITAL EQUIPMENT MANUFACTURING MARKET. We sell our products primarily to semiconductor capital equipment manufacturers for incorporation into equipment used to make integrated circuits, as well as other equipment manufacturers discussed below. Our products are currently used in the major semiconductor processing steps, including:

Chemical vapor deposition

Physical vapor deposition

Oxide etch

Poly etch

Conductor etch

Wafer handling

Chemical mechanical polishing

Our power systems provide the energy to drive the chemical reaction for thin-film processes such as deposition and etch. Our flow control products control the fluid or gas being delivered to ensure high-purity, our thermal instrumentation products measure the temperature of the process chamber and our source technology products optimize CVD clean, deposition and etch processes. The precise control over plasma-based processes enables the production of integrated circuits with reduced feature sizes and increased speed and performance. We anticipate that the semiconductor capital equipment industry will continue to be a substantial part of our business for the foreseeable future.

FLAT PANEL DISPLAY MANUFACTURING EQUIPMENT MARKET. We sell our products to manufacturers of flat panel displays and flat panel projection devices, which have fabrication processes similar to those employed in manufacturing integrated circuits. Flat panel technology produces bright, sharp, large, color-rich images on flat screens for products ranging from hand-held devices to laptop and desktop computer monitors to plasma and liquid crystal display-screen televisions. The transition to larger panel sizes and higher display resolution is driving the need for tighter process controls to reduce manufacturing costs and defects. There are three major types of flat panel displays: liquid crystal displays, field emitter displays, and gas plasma displays. There are two types of flat panel projection devices: liquid crystal projection and digital micro-mirror displays. We sell our products to all five of these flat panel markets.

DATA STORAGE MANUFACTURING EQUIPMENT MARKETS. We sell products to manufacturers of data storage equipment and data storage devices for use in producing a variety of products, including CDs, CD-ROMs and DVDs; computer hard discs, including both media and thin-film heads; and optical storage media. These products use

a PVD process to produce optical and magnetic thin-film layers as well as a protective-wear layer. In this market, the trend towards higher recording densities requires denser, thinner and more precise films. The use of equipment incorporating magnetic media to store analog and digital data expands with the growth

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of the laptop, desktop and workstation computer markets and the consumer electronics audio and video markets.

ADVANCED PRODUCT APPLICATIONS MARKETS. We sell our products to OEMs and producers of end products in a variety of industrial markets. Thin-film optical coatings are used in the manufacture of many industrial products, including solar panels, architectural glass, eyeglasses, lenses, barcode readers and front surface mirrors. Thin films of diamond-like coatings and other materials are currently applied to products in plasma-based processes to strengthen and harden surfaces on such diverse products as tools, razor blades, automotive parts and hip joint replacements. Other thin-film processes that use our products enable a variety of industrial packaging applications such as decorative wrapping and food packaging. The advanced thin-film production processes allow precise control of various optical and physical properties, including color, transparency and electrical and thermal conductivity. The improved adhesion and high-film quality resulting from plasma-based processing make it the preferred method of applying the thin films. Many of these thin-film industrial applications require power levels substantially greater than those used in our other markets.

Also included in the advanced product applications markets are our sales to OEMs of high-end computing, automated test equipment and DataCom products.

APPLICATIONS

We have sold our products for use in connection with the following processes and applications:

Semiconductor	**Data Storage**	**Flat Panel Display**	**Advanced Product Applications**
Chemical vapor deposition	CD-ROMs	Active matrix LCDs	Advanced computer technology workstations and servers
Etch (conductor and dielectric)	CDs	Digital micro-mirror	Automobile coatings
High-density plasma CVD	DVDs	Field emission displays	Chemical, physical and materials research
Ion implantation	Hard disc carbon wear coatings	Large flat panel displays	Circuit board etch-back and de-smear
Magnet field controls	Hard disc magnetic media	LCD projection	Consumer product coatings
Mass flow control	Magneto-optic CDs	Liquid crystal displays	Diamond-like coatings
Megasonic cleaning	Recordable CDs	Medical applications	Food package coatings
Optical fiber thermometers	Thin-film heads	Plasma displays	Glass coatings
Photo-resist stripping			Optical coatings
Physical vapor deposition			Photovoltaics
Plasma-enhanced CVD			Superconductors
Chemical mechanical polishing (CMP)			
Solid-state temperature controls			
Wafer handling			

CUSTOMERS

Our products are sold worldwide to more than 100 OEMs and directly to more than 500 end users. Our ten largest customers accounted for 59% of our total sales in 2004, 54% in 2003 and 53% in 2002. We expect that sales of our products to these customers will continue to account for a large percentage of our sales in the foreseeable future.

Applied Materials, our largest customer, accounted for 27% of our sales in 2004, 20% in 2003 and 27% in 2002. No other customer exceeded 10% of our sales during these yearly periods.

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Backlog

Our backlog decreased from $53.7 million at December 31, 2003 to $33.9 million at December 31, 2004. We schedule production of our systems based on order backlog and customer commitments. Backlog includes only orders scheduled to ship in the following quarter for which written authorizations have been accepted and revenue has not been recognized. Due to possible customer changes in delivery schedules and cancellations of orders, our backlog at any particular date is not necessarily indicative of actual sales for any succeeding period. Delays in delivery schedules and/or a reduction of backlog during any particular period could have a material adverse effect on our business and results of operations.

Marketing, Sales and Service

We sell our products primarily through direct sales personnel to customers in the United States, Europe and Asia. Our sales personnel are located at our headquarters in Fort Collins, Colorado, and in sales offices in San Jose, California; Austin and Dallas, Texas; and Vancouver, Washington. To serve customers in Asia and Europe, we have offices in Shenzhen and Shanghai, China; Bicester, England; Dresden, Filderstadt and Stolberg, Germany; Hachioji and Tokyo, Japan; Bundang, South Korea; and Hsinchu and Taipei Hsien, Taiwan. These offices have primary responsibility for sales in their respective markets. We also have distributors inside and outside the United States.

Sales outside the United States represented approximately 47% of our total sales in 2004, 53% in 2003 and 40% in 2002. International sales are subject to certain risks, including exposure to foreign currency fluctuations, the imposition of governmental controls, political and economic instability, trade restrictions, changes in tariffs and taxes and longer payment cycles typically associated with international sales.

We believe that customer service and technical support are important competitive factors and are essential to building and maintaining close, long-term relationships with our customers. We maintain customer service offices in Fort Collins, Colorado; San Jose, California; Austin and Dallas, Texas; Vancouver, Washington; Shanghai, China; Bicester, England; Dresden, Filderstadt and Stolberg, Germany; Hachioji and Tokyo, Japan; Bundang, South Korea; and Hsinchu and Taipei Hsien, Taiwan.

Manufacturing

Our manufacturing locations are in Fort Collins, Colorado; Shenzhen, China; Stolberg, Germany; Hachioji, Japan; and Vancouver, Washington. In 2004, we continued the realignment of our worldwide manufacturing infrastructure, with Shenzhen, China expected to be the central high-volume manufacturing site by the end of 2005. We announced plans to realign the Fort Collins, Colorado and Hachioji, Japan locations to focus on service and support, new product introduction and advanced manufacturing. We expect to complete the realignment by the end of 2005.

With the exception of our Fort Collins, Colorado and Shenzhen, China facilities, we generally manufacture different products at each facility. Of the total number of product lines planned for transfer to Shenzhen, China, we have completed approximately 75% of the power product transfers from Fort Collins, Colorado and have transferred approximately 60% of mass flow control products from Hachioji, Japan as of the end of 2004. Our manufacturing activities consist

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of the assembly and testing of components and subassemblies, which are then integrated into our final products. Once final testing of all electrical and electro-mechanical subassemblies is completed, the final product is subjected to a series of reliability-enhancing operations prior to shipment to our customers. We purchase a wide range of electronic, mechanical and electrical components, some of which are designed to our specifications. We are increasingly outsourcing more of our subassembly work.

We rely on sole and limited source suppliers for certain parts and subassemblies. This reliance creates a potential inability to obtain an adequate supply of required components and reduces control over pricing and delivery time of components. An inability to obtain adequate supplies would require us to seek alternative sources of supply or might require us to redesign our products to accommodate different components or subassemblies. We could be prevented from the timely shipment of our products to our customers if we are forced to seek alternative sources of supply, manufacture such components or subassemblies internally, or redesign our products. Further, due to our customers strict and extensive requirements, most supplier changes require vendor requalification, which can be time consuming and costly.

Intellectual Property

We have a practice of seeking patents on inventions governing new products or technologies as part of our ongoing research, development and manufacturing activities. We currently hold 86 United States patents, 37 foreign-issued patents, and have over 100 patent applications pending in the United States, Europe and Asia. Generally, our efforts to obtain international patents have been concentrated in the United Kingdom, Germany, France and the Pacific Rim, because there are other manufacturers and developers of power conversion and control systems in those countries as well as customers for those systems.

Litigation may from time to time be necessary to enforce patents issued to us, to protect trade secrets or know-how owned by us, to defend us against claimed infringement of the rights of others or to determine the scope and validity of the proprietary rights of others. See Cautionary Statements Risk Factors We are highly dependent on our intellectual property.

Competition

The markets we serve are highly competitive and characterized by ongoing technological development and changing customer requirements. Significant competitive factors in our markets include product performance, price, quality and reliability and level of customer service and support. We believe that we currently compete effectively with respect to these factors, although we cannot assure that we will be able to compete effectively in the future.

The markets in which we compete have seen an increase in global competition, especially from Asian and European-based equipment vendors. We have several foreign and domestic competitors for each of our product lines. Some of these competitors are larger and have greater resources than we have. Our ability to continue to compete successfully in these markets depends on our ability to make timely introductions of system enhancements and new products. We expect our competitors will continue to improve the design and performance of their products and to introduce new products with competitive performance characteristics. We believe we will be required to maintain a high level of investment in both research and development and sales and marketing in order to remain competitive.

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Operating Segment

We operate and manage our business of manufacturing, marketing and servicing components and subsystems for plasma-based manufacturing processes as one segment. All material operating units qualify for aggregation under Statement of Financial Accounting Standards (SFAS) No. 131, Disclosures About Segments of an Enterprise and Related Information, because all of our products and systems have similar economic characteristics, procurement, production and distribution processes. To report revenues from external customers for each product and service or each group of similar products and services would be impracticable. Since we operate in one segment, all financial segment information required by SFAS No. 131 is found in the accompanying consolidated financial statements. Please refer to Note 15 Foreign Operations and Major Customers, included in Part II, Item 8 of this Form 10-K/A for further discussion regarding our operations.

Research and Development

The market for our subsystems for vacuum process systems and related accessories is characterized by ongoing technological changes. We believe that continued and timely development of new highly differentiated products and enhancements to existing products to support OEM requirements is necessary for us to maintain a competitive position in the markets we serve. Accordingly, we devote a significant portion of our personnel and financial resources to research and development projects and seek to maintain close relationships with our customers and other industry leaders in order to remain responsive to their product requirements. Research and development expenses were $51.5 million in 2004, $51.6 million in 2003 and $49.0 million in 2002, representing 13.0% of total sales in 2004, 19.7% in 2003 and 20.5% in 2002.

Number of Employees

As of December 31, 2004, we had a total of 1,651 employees, 1,486 of whom were full-time employees. There is no union representation of our employees, and we have never experienced an involuntary work stoppage. We consider our employee relations to be good.

Effect of Environmental Laws

We are subject to federal, state and local environmental laws and regulations, as well as the environmental laws and regulations of the foreign federal and local jurisdictions in which we have manufacturing facilities. We believe we are in compliance with all such laws and regulations.

Cautionary Statements Risk Factors

This Form 10-K/A includes forward-looking statements within the meanings of Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended. All statements contained or incorporated by reference in this Form 10-K/A, other than statements of historical fact, are forward-looking statements. For example, statements relating to our beliefs, expectations, plans and projections are forward-looking statements as are statements that specified actions, conditions or circumstances will continue or change. Forward-looking statements involve risks and uncertainties. In some cases, forward-looking statements can be identified by the inclusion of words such as believe, expect, plan, anticipate, estimate and similar words.

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Some of the forward-looking statements in this Form 10-K/A are expectations or projections relating to:

Our ability to refinance our convertible subordinated notes due in 2006;

Our future revenues;

Our future gross profit;

Transitioning our high-volume manufacturing to Shenzhen, China;

Transitioning to high-quality, low-cost suppliers local to our Shenzhen, China facility (Tier 1 Asian suppliers);

Market acceptance of our products;

Reducing our operating breakeven point;

Customer inventory levels, requirements and order levels;

Research and development expenses;

Selling, general and administrative expenses;

Sufficiency and availability of capital resources;

Capital expenditures;

Restructuring activities and expenses; and

General global economic conditions.

Our actual results could differ materially from those projected or assumed in our forward-looking statements, because forward-looking statements by their nature are subject to risks and uncertainties. Factors that could contribute to these differences or prove our forward-looking statements, by hindsight, to be overly optimistic or unachievable include the factors described in this section. Other factors might also contribute to the differences between our forward-looking statements and our actual results. We assume no obligation to update any forward-looking statement or the reasons why our actual results might differ.

We have $187.7 million of convertible subordinated notes outstanding with maturity dates in the second half of 2006. Our current cash reserves are insufficient to repay this debt in full. We will not be able to internally generate sufficient cash from operations to repay this debt by the maturity dates. Depending upon the price of our stock, refinancing our debt obligations, if possible, may result in dilution of our common shareholders equity.

We will be required to repay the notes at maturity, unless we can refinance the debt or the noteholders convert their notes into common stock before the maturity dates. Our 5.0% convertible subordinated notes with a principal balance of $121.5 million are due September 1, 2006, and our 5.25% convertible subordinated notes with a principal balance of $66.2 million are due November 15, 2006. Our 5.0% notes are convertible into common stock at $29.83 per share. Our 5.25% notes are convertible into common stock at $49.53 per share. Noteholders will be unlikely to convert their notes unless our stock price rises above the conversion levels of the notes. On March 24, 2005 the closing price of our common stock on the Nasdaq National Market was $9.35 per share.

We are exploring ways to refinance the notes, as well as potential sales of assets that are not critical to our core operations. We might not be able to refinance the notes prior to their maturity on commercially reasonable terms, or at all. Refinancing the debt, if possible, might result in dilution to our common stockholder s equity. If we are unable to repay or refinance the notes at or before maturity, the trustee of the notes will have the right to bring judicial proceedings against us to enforce the noteholders rights, including the right to repayment prior and in preference to our common stockholders and potentially the right to force us to liquidate some of our assets.

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The semiconductor, semiconductor capital equipment and flat panel display industries are highly cyclical, which impacts our operating results.

These industries have historically been growth cyclical because of sudden changes in demand for semiconductors, flat panel displays and the related manufacturing capacity. The rate of changes in demand, including end demand, is accelerating, and the effect of these changes is occurring sooner, exacerbating the volatility of these cycles. These changes affect the timing and amount of our customers equipment purchases and investments in new technology, as well as our costs and operations.

During periods of declining demand, our customers typically reduce purchases, delay delivery of products and cancel orders. We might incur significant charges as we seek to align our cost structure with the reduction in sales. In addition, we might not be able to respond adequately or quickly to the declining demand. We may also be required to record significant reserves for excess and obsolete inventory as demand for our products changes. Our inability to reduce costs and the charges resulting from other actions taken in response to changes in demand for our products would adversely affect our operating results.

Our quarterly and annual operating results fluctuate significantly and are difficult to predict.

Beginning in 2001 and through late 2003, demand for our products from the semiconductor capital equipment industry declined substantially from its peak in 2000, and we incurred significant losses each quarter from the second quarter of 2001 through the fourth quarter of 2003. We were able to generate net income of $11.4 million in the first half of 2004 followed by a net loss of $24.1 million in the second half of 2004. Fluctuations in our operating results historically have resulted in corresponding changes in the market prices of our securities. Our operating results are affected by a variety of factors, many of which are beyond our control and difficult to predict. These factors include:

- Changes in economic conditions in the semiconductor, semiconductor capital equipment and flat panel display industries and other industries in which our customers operate;
- The timing and nature of orders placed by our customers;
- The seasonal variations in capital spending by our customers;
- Changes in customers inventory management practices;
- Customer cancellations of previously placed orders and shipment delays;
- Pricing competition from our competitors;

Customer demands to reduce prices, enhance features, improve reliability, shorten delivery times and extend payment terms;

Component shortages or allocations or other factors that change our levels of inventory or substantially increase our spending on inventory or result in manufacturing delays;

The introduction of new products by us or our competitors;

Declines in macroeconomic conditions;

Potential litigation especially regarding intellectual property; and

Our exposure to currency exchange rate fluctuations between the several functional currencies in foreign locations in which we have operations. Currently, a 10% adverse change in exchange rates would have approximately a 3% to 4% adverse impact on reported revenues and expenses.

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Our near-term profitability will be impacted by our transition of the production of substantially all of our product lines to our manufacturing facility in Shenzhen, China, which transition has taken longer than initially anticipated.

We have invested significant human and financial resources to establish our manufacturing facility in Shenzhen, China. These investments are being made in anticipation of reducing our labor costs by increasing our workforce in China and correspondingly decreasing our workforce in the United States.

Slower than expected customer acceptance of products manufactured in our Shenzhen facility has required us to operate duplicate manufacturing facilities throughout 2004, which has negatively affected our gross margin and operating expenses, including logistics costs. By the end of 2004, we had transferred production of 19 of the 25 product lines we had planned to transfer to the Shenzhen facility, with the remaining 6 product lines expected to be transferred by the end of 2005. Some of our major customers have strict and extensive requirements, which may continue to delay or prevent them from accepting the remaining 6 product lines to be transferred to our Shenzhen facility. We will continue to experience operating inefficiencies, and thus might not achieve profitability until we can complete the transfer of a sufficient volume of our manufacturing to our Shenzhen facility.

We might not realize all of the intended benefits of transitioning our supply base to Tier 1 Asian suppliers.

We anticipate purchasing a substantial portion of components for our products from Asian suppliers by the end of 2005 to lower our materials costs and shipping expenses. These components might require us to incur higher than anticipated testing or repairing costs, which would have an adverse effect on our operating results. Customers, including major customers who have strict and extensive requirements, might not accept our products if they contain these lower-priced components. A delay or refusal by our customers to accept such products might require us to continue to purchase higher-priced components from our existing suppliers or might cause us to lose sales to these customers, which would have an adverse effect on our operating results.

Governmental or regulatory actions in China, Japan, the United States or any other country in which we operate might increase our costs, including new costs incurred to comply with such actions. Any such action could have an adverse effect on our operating results.

The regulatory environments in every country in which we operate are subject to change, and as a result new governmental or regulatory actions may be mandated, with which we may be required to comply. We might incur higher than anticipated costs to comply with such regulations or might be limited in the nature or amount of business that we can conduct. Specifically, a future decision by the Chinese government to allow the Chinese yuan to float against the U.S. dollar could significantly increase the labor and other costs incurred in the operation of our Shenzhen facility.

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Component shortages exacerbated by our dependence on sole and limited source suppliers could affect our ability to manufacture products and systems and could delay our shipments.

Our business depends on our ability to manufacture products that meet the rapidly changing demands of our customers. Our ability to manufacture depends in part on the timely delivery of parts, components and subassemblies from suppliers. We rely on sole and limited source suppliers for some of our parts, components and subassemblies that are critical to the manufacturing of our products. This reliance involves several risks, including the following:

- The potential inability to obtain an adequate supply of required parts, components or subassemblies;
- The potential for a sole source provider to cease operations;
- Our potential need to fund the operating losses of a sole source provider;
- Reduced control over pricing and timing of delivery of parts, components or subassemblies; and
- The potential inability of our suppliers to develop technologically advanced products to support our growth and development of new products.

If we are unable to successfully qualify additional suppliers and manage relationships with our existing and future suppliers, we will experience shortages of parts, components or subassemblies, increased material costs and shipping delays for our products, which will adversely affect our results of operations and relationships with current and prospective customers.

We are highly dependent on our intellectual property.

Our success depends significantly on our proprietary technology. We attempt to protect our intellectual property rights through patents and non-disclosure agreements; however, we might not be able to protect our technology, and competitors might be able to develop similar technology independently. In addition, the laws of some foreign countries might not afford our intellectual property the same protections as do the laws of the United States. Our intellectual property is not protected by patents in several countries in which we do business, and we have limited patent protection in other countries, including China. The cost of applying for patents in foreign countries and translating the applications into foreign languages requires us to select carefully the inventions for which we apply for patent protection and the countries in which we seek such protection. Generally, our efforts to obtain international patents have been concentrated in the United Kingdom, Germany, France and the Pacific Rim, because there are other manufacturers and developers of power conversion and control systems in those countries as well as customers for those systems. If we are unable to protect our intellectual property successfully, our results of operations will be adversely affected.

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Intellectual property rights are difficult to enforce in China.

Commercial law in China is relatively undeveloped compared to the commercial law in the United States. Limited protection of intellectual property is available under Chinese law. Consequently, manufacturing our products in China may subject us to an increased risk that unauthorized parties may attempt to copy or otherwise obtain or use our intellectual property. We cannot assure you that we will be able to protect our intellectual property rights effectively or have adequate legal recourse in the event that we encounter infringements of our intellectual property under Chinese law.

We have been and continue to be involved in patent litigation, which has resulted in substantial costs and could result in additional costs, restrictions on our ability to sell certain products and an inability to prevent others from using technology we have developed.

In May 2002, a jury determined that we had infringed a patent held by MKS Instruments, Inc. (MKS) by selling one of our reactive gas generators, known as our RAPID product. Following the jury verdict, we entered into a settlement agreement with MKS, pursuant to which we paid MKS $4.2 million and agreed to pay royalties in connection with future sales of the infringing RAPID product.

MKS filed a patent infringement suit against us in the United States District Court in Wilmington, Delaware, in May 2003 and a counterpart action in Germany in June 2004, alleging that our Xstream With Active Matching Network products (Xstream products) infringe patents held by MKS. Our Xstream products are reactive gas generators. In July 2004, a jury in the U.S. litigation returned a verdict against us, finding that our Xstream products infringe three MKS patents. A hearing regarding damages has not been held or scheduled. The court has not enjoined us from selling our Xstream products. A decision on the infringement allegation in Germany is expected on April 8, 2005, while an action for nullity of MKS s German patent remains pending.

We also have been involved in patent litigation with other parties, including Sierra Applied Sciences and the Unaxis Corporation. In 2004, we incurred approximately $4.9 million in legal fees in connection with patent litigation.

Further patent litigation might:

Cause us to incur substantial costs in the form of legal fees, fines and royalty payments;

Result in restrictions on our ability to sell certain products;

Result in an inability to prevent others from using technology we have developed; and

Require us to redesign products or seek alternative technologies.

Any of these events could have a significant adverse effect on our business, financial condition and results of operations.

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A significant portion of our sales is concentrated among a few customers.

Our ten largest customers accounted for 59% of our total sales during 2004, 54% in 2003 and 53% in 2002. Our largest customer, Applied Materials, accounted for 27% of our total sales in 2004, 20% in 2003 and 27% in 2002. No other customer represented greater than 10% of our total sales for any of the three yearly periods ended December 31, 2004. The loss of any of our significant customers or a material reduction in any of their purchase orders would significantly harm our business, financial condition and results of operations.

Our customers continuously exert pressure on us to reduce our prices and extend payment terms. Given the nature of our customer base and the highly competitive markets in which we compete, we may be required to issue price concessions to our customers to remain competitive. A ten percent reduction in our historical selling prices could lead to a nine percent or greater decline in gross margin. We may not be able to reduce our other operating expenses in an amount sufficient to offset potential margin declines.

Certain of our largest customers also exert pressure on us to restrict our product distribution including, limiting the sale of our products to certain original equipment manufacturers, based on shared technological development, and prohibiting sales to our end user customer base entirely. Given our size relative to certain of our largest customers, we may be required to agree to limitations of this nature to remain competitive. Such limitations of our customer base would significantly harm our business.

The markets in which we operate are highly competitive.

We face substantial competition, primarily from established companies, some of which have greater financial, marketing and technical resources than we do. We expect our competitors will continue to develop new products in direct competition with ours, improve the design and performance of their products and introduce new products with enhanced performance characteristics.

To remain competitive, we must improve and expand our products and product offerings. In addition, we may need to maintain a high level of investment in research and development and expand our sales and marketing efforts, particularly outside of the United States. We might not be able to make the technological advances and investments necessary to remain competitive. Our inability to improve and expand our products and product offerings would have an adverse affect on our sales and results of operations.

We might not be able to compete successfully in international markets or meet the service and support needs of our international customers.

Our sales to customers outside the United States were approximately 47% in 2004, 53% in 2003 and 40% in 2002. Our success in competing in international markets is subject to our ability to manage various risks and difficulties, including, but not limited to:

Our ability to develop relationships with suppliers and other local businesses;

Compliance with product safety requirements and standards that are different from those of the United States;

Variations in enforcement of intellectual property and contract rights in different jurisdictions;

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Trade restrictions, political instability, disruptions in financial markets and deterioration of economic conditions;

The ability to provide sufficient levels of technical support in different locations;

Collecting past due accounts receivable from foreign customers; and

Changes in tariffs, taxes and foreign currency exchange rates.

Our ability to implement our business strategies, maintain market share and compete successfully in international markets will be compromised if we are unable to manage these and other international risks successfully.

We must achieve design wins to retain our existing customers and to obtain new customers.

The constantly changing nature of semiconductor fabrication technology causes equipment manufacturers to continually design new systems. We must work with these manufacturers early in their design cycles to modify our equipment or design new equipment to meet the requirements of their new systems. Manufacturers typically choose one or two vendors to provide the components for use with the early system shipments. Selection as one of these vendors is called a design win. It is critical that we achieve these design wins in order to retain existing customers and to obtain new customers.

Once a manufacturer chooses a component for use in a particular product, it is likely to retain that component for the life of that product. Our sales and growth could experience material and prolonged adverse effects if we fail to achieve design wins. However, design wins do not always result in substantial sales or profits.

We believe that equipment manufacturers often select their suppliers based on factors such as long-term relationships. Accordingly, we may have difficulty achieving design wins from equipment manufacturers who are not currently customers. In addition, we must compete for design wins for new systems and products of our existing customers, including those with whom we have had long-term relationships. If we are not successful in achieving design wins our sales and results of operations will be adversely impacted.

Our Chief Executive Officer has announced his intent to retire in 2005. Our success may depend upon our ability to identify and recruit a new chief executive officer who can lead and manage the company.

Douglas S. Schatz, our President, Chief Executive Officer and Chairman of the Board, notified our Board of Directors on December 30, 2004, of his intent to retire from his executive positions as soon as his successor can be recruited. The search for Mr. Schatz s successor requires substantial time and attention from our Board of Directors and senior management. The impending retirement of Mr. Schatz also creates uncertainty among our employees, including senior management. If we are unable to identify and recruit an appropriate successor for Mr. Schatz or if we are unable to retain our senior management team during the process, our ability to realize fully the benefits of our investments in research and development, our Shenzhen facility and other business plans may be at risk.

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Warranty costs on certain products may be in excess of historical experience.

In recent years, we have experienced higher than expected levels of warranty costs on some products. We have been required to repair, rework and, in some cases, replace these products. Our warranty costs generally increase when we introduce newer, more complex products. We recorded warranty expense of approximately $10.5 million in 2004, $8.1 million in 2003 and $13.2 million in 2002. These expenses represented approximately 2.6% of our sales in 2004, 3.1% in 2003 and 5.5% in 2002. If such levels of warranty costs increase in the future, our financial condition and results of operations will be adversely affected.

We are subject to numerous governmental regulations.

We are subject to federal, state, local and foreign regulations, including environmental regulations and regulations relating to the design and operation of our products and control systems. We might incur significant costs as we seek to ensure that our products meet safety and emissions standards, many of which vary across the states and countries in which our products are used. In the past, we have invested significant resources to redesign our products to comply with these directives. We believe we are in compliance with current applicable regulations, directives and standards and have obtained all necessary permits, approvals and authorizations to conduct our business. However, compliance with future regulations, directives and standards could require us to modify or redesign some products, make capital expenditures or incur substantial costs. If we do not comply with current or future regulations, directives and standards:

We could be subject to fines;

Our production could be suspended; or

We could be prohibited from offering particular products in specified markets.

Our inability to comply with current or future regulations, directives and standards will adversely affect our operating results.

Our Chief Executive Officer owns a significant percentage of our outstanding common stock, which could enable him to control our business and affairs.

Douglas S. Schatz, our Chief Executive Officer, owned approximately 33% of our common stock outstanding as of March 24, 2005. This stockholding gives Mr. Schatz significant voting power. Depending on the number of shares that abstain or otherwise are not voted on a particular matter, Mr. Schatz may be able to elect all of the members of our board of directors and to control our business affairs for the foreseeable future in a manner with which our other stockholders may not agree.

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EXECUTIVE OFFICERS OF THE REGISTRANT

Our executive officers, their positions and their ages as of March 24, 2005, are as follows:

Name	Age	Position
Douglas S. Schatz	59	Chairman of the Board, President and Chief Executive Officer
Michael El-Hillow	53	Executive Vice President of Finance and Administration and Chief Financial Officer
Linda A. Capuano	53	Executive Vice President and Chief Technology Officer
Charles S. Rhoades	44	Executive Vice President, Products and Operations
James G. Guilmart	50	Senior Vice President of Sales

Douglas S. Schatz is a co-founder and has been our Chief Executive Officer and Chairman of the Board since our incorporation in 1981. From our incorporation to July 1999, Mr. Schatz also served as our President. In March 2001, Mr. Schatz was reappointed as President. Mr. Schatz also serves as a Director of Advanced Power Technology, Inc., a manufacturer of power semiconductors. Mr. Schatz is a member of the CEO Committee of the Mountain States Council of the American Electronics Association and serves on the Engineering Advisory Board of Colorado State University.

Michael El-Hillow joined us in November 2001 as Senior Vice President of Finance and Administration and Chief Financial Officer; in February 2003 he was named Executive Vice President. From April 1997 to July 2001, Mr. El-Hillow was Senior Vice President and Chief Financial Officer of Helix Technology Corporation, a manufacturer of vacuum products for semiconductors, flat panel display and data storage markets. He was Senior Vice President and Chief Financial Officer of Spike Broadband Systems, Inc. from July 2001 to October 2001. Prior to his roles at Helix Technology Corporation, he was Vice President, Finance, Treasurer and Chief Financial Officer at A.T. Cross Company and an audit partner at Ernst & Young LLP. Mr. El-Hillow serves on the Board of Directors of Evergreen Solar, Inc., a manufacturer of solar panels and related products.

Linda A. Capuano serves as Executive Vice President and Chief Technology Officer. Prior to joining us in October 2004, Dr. Capuano served in various capacities at Honeywell (formerly AlliedSignal, Inc.) since July 1995. Most recently, she was Corporate Vice President of Technology Strategy at Honeywell International, Inc. since September 2001; her previous roles spanned marketing, technology innovation, new business development, and general business management. She also served as Vice President of Operations and Business Development from June 1988 to July 1995 and as Chief Financial Officer from 1992 to 1994, at Conductus, Inc., a company which she co-founded. Dr. Capuano is also an associate member of the National Academy of Sciences.

Charles S. Rhoades joined us in September 2002 as Senior Vice President and General Manager of Control Systems and Instrumentation; in November 2004 he was named Executive Vice President of Products and Operations. From March 2000 to September 2002, Mr. Rhoades was Vice President, Corporate Development at Portera Systems. Prior to Portera Systems, he was Managing Director of Product Development at Lam Research.

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James G. Guilmart joined us in September 1999 as Director of Applied Materials Account Team and was named Senior Vice President of Sales in October 2000. From October 1998 to August 1999, he was Senior Vice President, SAP Business Unit at Siemens Information and Communications Products, LLC. Prior to Siemens, he was Vice President, Business Implementation at Unisys Corporation.

ITEM 2. PROPERTIES

Information concerning our principal properties at December 31, 2004 is set forth below.

Location	Type	Principal Use	Sq. Footage	Ownership
San Jose, CA	Office	Distribution	20,000	Leased
Fort Collins, CO	Office, plant	Headquarters, Research and development, Manufacturing, Distribution	248,000	Leased
Austin, TX	Office	Distribution	8,000	Leased
Dallas, TX	Office	Distribution	2,000	Leased
Vancouver, WA	Office, plant	Research and development, Manufacturing, Distribution	20,000	Leased
Shanghai, China	Office	Distribution	8,000	Leased
Shenzhen, China	Office, plant	Manufacturing, Distribution	100,000	