

ADVANCED ENERGY INDUSTRIES INC

FORM S-3/A

(Securities Registration Statement (simplified form))

Filed 4/19/2002

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CIK	0000927003
Industry	Electronic Instr. & Controls
Sector	Technology
Fiscal Year	12/31

REGISTRATION NO. 333-72748

SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549

AMENDMENT NO. 5

TO

FORM S-3

REGISTRATION STATEMENT UNDER THE SECURITIES ACT OF 1933

ADVANCED ENERGY INDUSTRIES, INC.

(Exact Name of Registrant as Specified in Its Charter)

DELAWARE
(State or other jurisdiction of
incorporation or organization)

84-0846841
(IRS Employer
Identification Number)

1625 SHARP POINT DRIVE
FORT COLLINS, COLORADO 80525

(970) 221-4670

(Address, including zip code, and telephone number, including area code, of
Registrant's principal executive offices)

MICHAEL EL-HILLOW
SENIOR VICE PRESIDENT AND CHIEF FINANCIAL OFFICER
ADVANCED ENERGY INDUSTRIES, INC.

1625 SHARP POINT DRIVE
FORT COLLINS, COLORADO 80525

(970) 221-4670

(Name, address, including zip code, and telephone number, including area code,
of agent for service)

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APPROXIMATE DATE OF PROPOSED SALE TO THE PUBLIC: From time to time after
the effective date of this registration statement.

If the only securities being registered on this Form are being offered pursuant to dividend or interest reinvestment plans, please check the following box. ☐

If any of the securities being registered on this Form are to be offered on a delayed or continuous basis pursuant to Rule 415 under the Securities Act of 1933, other than securities offered only in connection with dividend or interest reinvestment plans, check the following box. ☒

If this Form is filed to register additional securities for an offering pursuant to Rule 462(b) under the Securities Act, please check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering. ☐

If this Form is a post-effective amendment filed pursuant to Rule 462(c) under the Securities Act, check the following box and list the

Securities Act registration statement number of the earlier effective registration statement for the same offering. []

If delivery of the prospectus is expected to be made pursuant to Rule 434, please check the following box. []

THE REGISTRANT HEREBY AMENDS THIS REGISTRATION STATEMENT ON SUCH DATE OR DATES AS MAY BE NECESSARY TO DELAY ITS EFFECTIVE DATE UNTIL THE REGISTRANT SHALL FILE A FURTHER AMENDMENT THAT SPECIFICALLY STATES THAT THIS REGISTRATION STATEMENT SHALL THEREAFTER BECOME EFFECTIVE IN ACCORDANCE WITH SECTION 8(a) OF THE SECURITIES ACT OR UNTIL THE REGISTRATION STATEMENT SHALL BECOME EFFECTIVE ON SUCH DATE AS THE SECURITIES AND EXCHANGE COMMISSION, ACTING PURSUANT TO SAID SECTION 8(a), MAY DETERMINE.

THE INFORMATION IN THIS PROSPECTUS IS NOT COMPLETE AND MAY BE CHANGED. THE SELLING SECURITY HOLDERS MAY NOT SELL THESE SECURITIES UNTIL THE REGISTRATION STATEMENT FILED WITH THE SECURITIES AND EXCHANGE COMMISSION IS EFFECTIVE. THIS PROSPECTUS IS NOT AN OFFER TO SELL THESE SECURITIES AND IT IS NOT SOLICITING AN OFFER TO BUY THESE SECURITIES IN ANY STATE WHERE THE OFFER OR SALE IS NOT PERMITTED.

SUBJECT TO COMPLETION, DATED APRIL 18, 2002

PROSPECTUS

[ADVANCED ENERGY INDUSTRIES, INC LOGO]

ADVANCED ENERGY INDUSTRIES, INC.
\$125,000,000

5.00% Convertible Subordinated Notes due September 1, 2006 and Shares of Common Stock Issuable Upon Conversion of the Notes

This prospectus covers resales by selling securityholders of our 5.00% Convertible Subordinated Notes due September 1, 2006 and shares of our common stock issuable upon conversion of the notes. See "Plan of Distribution."

MATURITY

The notes are due on September 1, 2006, unless earlier converted, redeemed by us at our option or repurchased by us at your option.

INTEREST

We will pay interest on the notes on March 1 and September 1 of each year at the rate of 5.00% per year, commencing on March 1, 2002.

REDEMPTION

We may redeem the notes, in whole or in part, at any time before September 4, 2004 at a redemption price equal to \$1,000 per \$1,000 principal amount of notes to be redeemed plus accrued and unpaid interest, if any, to the date of redemption if the closing price of our common stock has exceeded 150% of the conversion price then in effect for at least 20 trading days within a period of 30 consecutive trading days ending on the trading day before the date of mailing of the provisional redemption notice. If we redeem the notes under these circumstances, we will make an additional "make whole" payment of \$150.56 per \$1000 notes, minus any interest paid or accrued and unpaid to the redemption date. We may redeem some or all of the notes at any time after September 4, 2004.

SUBORDINATION

The notes are subordinated to all of our existing and future senior debt.

CONVERSION

You may convert your notes at any time prior to maturity or redemption into shares of our common stock at a conversion rate of 33.5289 shares of common stock per \$1,000 principal amount of notes, equal to a conversion price of approximately \$29.83 per share, subject to adjustment.

REPURCHASE RIGHT

You have the right to require us to purchase all or a portion of your notes upon a change in control.

THE NASDAQ NATIONAL MARKET

Our common stock is quoted on the Nasdaq National Market under the symbol "AEIS." On April 17, 2002, the last reported sale price of our common stock on the Nasdaq National Market was \$37.80 per share.

We do not intend to apply for listing of the notes on any securities exchange or for inclusion of the notes in any automated quotation system.

INVESTING IN THE NOTES OR THE COMMON STOCK INTO WHICH THE NOTES ARE CONVERTIBLE INVOLVES RISKS. PLEASE CAREFULLY CONSIDER THE "RISK FACTORS" BEGINNING ON PAGE 6 OF THIS PROSPECTUS.

NEITHER THE SECURITIES AND EXCHANGE COMMISSION NOR ANY STATE SECURITIES COMMISSION HAS APPROVED OR DISAPPROVED OF THESE SECURITIES OR PASSED UPON THE ADEQUACY OR ACCURACY OF THIS PROSPECTUS. ANY

REPRESENTATION TO THE CONTRARY IS A CRIMINAL OFFENSE.

The date of this prospectus is , 2002.

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SUMMARY

The following summary is qualified in its entirety by the more detailed information and historical consolidated financial statements, including the notes to those financial statements, appearing elsewhere in this prospectus or incorporated by reference herein. Investors should carefully consider the information set forth under "Risk Factors". Unless the context otherwise requires, the term "Advanced Energy" refers to Advanced Energy Industries, Inc., and the terms "company", "we", "us" and "our" refer to Advanced Energy Industries, Inc., and its subsidiaries.

ADVANCED ENERGY INDUSTRIES, INC.

We design, manufacture and support a group of key subsystems for vacuum process systems. Our customers use our products in plasma-based thin-film processing equipment that is essential to the manufacture of semiconductors; compact disks, DVDs and other digital storage media; flat-panel computer and television screens; coatings for architectural glass and optics. We also manufacture power supplies for advanced technology computer workstations.

Our direct current, or DC, and radio frequency, or RF, power systems refine, modify and control the raw electrical power from a utility and convert it into power that is uniform and predictable. This allows manufacturing equipment to produce and deposit very thin films at an even thickness on a mass scale. Moreover, through our acquisitions of Engineering Measurements Company in January 2001 and Aera Japan Ltd. in January 2002, which provide gas flow products, and Noah Holdings, Inc. in April 2000 and Sekidenko, Inc. in August 2000, which provide thermal control and measurement products, we are a company that can provide high quality components and systems that bring together technologies that provide our customers increased precision and productivity.

We market and sell our systems primarily to large, original equipment manufacturers, or OEMs, of semiconductor, flat panel display, data storage and other industrial thin film manufacturing equipment. We have sold our systems worldwide to more than 100 OEMs and directly to more than 500 end-users. Our principal customers include Applied Materials, Inc., Axcelis Technologies, Inc., Lam Research Corporation, Novellus Systems, Inc., ULVAC Technologies, Inc. and The Unaxis Corporation. Sales to customers in the semiconductor capital equipment industry comprised 59% of our sales in 2001, 70% in 2000 and 65% in 1999. We sell our systems primarily through direct sales personnel to customers in the United States, Europe and Asia, and through distributors in various regions outside the United States. International sales represented 36% of our sales in 2001, 28% in 2000 and 27% in 1999.

DEVELOPMENT OF COMPANY BUSINESS

We incorporated in Colorado in 1981 and reincorporated in Delaware in 1995. In 1995, we effected the initial public offering of our Common Stock. Our executive offices are located at 1625 Sharp Point Drive, Fort Collins, Colorado 80525, and our telephone number is 970-221-4670.

THE NOTES

Maturity date.....	September 1, 2006.
Subordination.....	The notes are subordinated to our present and future senior debt, as that term is defined in "Description of the Notes -- Subordination." The notes are also effectively subordinated in right of payment to all indebtedness and other liabilities of our subsidiaries. As of December 31, 2001, we had no outstanding "senior debt", and the aggregate amount of indebtedness and other liabilities of our subsidiaries was approximately \$10.6 million (excluding intercompany liabilities). As part of the acquisition of Aera Japan Ltd., Advanced Energy assumed approximately \$34 million of senior debt. The indenture under which the notes are issued does not restrict the incurrence of "senior debt" by us or the incurrence of other indebtedness or liabilities by us or any of our subsidiaries. See "Description of Notes -- Subordination."
Interest payment dates.....	March 1 and September 1 of each year, beginning March 1, 2002.
Interest rate.....	5.00% per annum.
Conversion rights.....	Any portion of the notes that is an integral multiple of \$1,000 is convertible at the option of the holder into shares of our common stock at a conversion rate of 33.5289 shares of common stock per \$1,000 principal amount of notes. This is equivalent to a conversion price of approximately \$29.83 per share. The conversion rate is subject to adjustment in some events. The notes are convertible at any time before the close of business on the maturity date, unless we have previously redeemed or repurchased the notes. Holders of notes called for redemption or submitted for repurchase will be entitled to convert the notes up to the close of business on the business day immediately preceding the date fixed for redemption or repurchase, as the case may be. See "Description of Notes -- Conversion Rights."
Sinking fund.....	None
Provisional redemption.....	We may redeem the notes, in whole or in part, at any time before September 4, 2004, at a redemption price equal to \$1,000 per \$1,000 principal amount of notes to be redeemed plus accrued and unpaid interest, if any, to the date of redemption if the closing price of our common stock has exceeded 150% of the conversion

price then in effect for at least 20 trading days within a period of 30 consecutive trading days ending on the trading day before the date of mailing of the provisional redemption notice. Upon any provisional redemption, we will make an additional payment in cash with respect to the notes called for redemption in an amount equal to \$150.56 per \$1,000 principal amount of notes, less the amount of any interest actually paid or accrued and unpaid on the note prior to the redemption date. We may make this additional payment in shares of our common stock, and any payment in common stock will be valued at 95% of the average of the closing sales prices of our common stock for the five consecutive days ending on the day prior to the redemption date. We will be obligated to make this additional payment on all notes called for provisional redemption, including any notes converted after the notice date and before the provisional redemption date. See "Description of Notes -- Optional Redemption by Advanced Energy -- Provisional Redemption."

Non-Provisional redemption by
Advanced Energy.....

We may redeem the notes, at our option, in whole or in part, on or after September 4, 2004, at the redemption prices set forth in this prospectus plus accrued and unpaid interest to the redemption date. See "Description of Notes -- Optional Redemption by Advanced Energy -- Non-Provisional Redemption."

Repurchase at option of holders upon
a change in control.....

Upon a "change in control," as that term is described in "Description of the Notes -- Repurchase at Option of Holders Upon a Change in Control," you will have the right, subject to specific conditions and restrictions, to require us to repurchase your notes, in whole or in part, at 100% of their principal amount, together with interest accrued but unpaid to, but excluding, the repurchase date. The repurchase price is payable in cash or, at our option, and subject to specific conditions, in shares of common stock. If we pay the repurchase price in common stock, the common stock will be valued at 95% of the average closing sales prices of the common stock for the five trading days preceding and including the third trading day prior to the repurchase date. See "Description of Notes -- Repurchase at Option of Holders Upon a Change in Control."

Events of default.....

The following are events of default under the indenture for the notes:

- we fail to pay principal of or any premium on any note when due, whether or not the payment is prohibited by the subordinated provisions of the indenture;
- we fail to pay any interest on any note when due and that default continues for 30 days, whether or not the payment is prohibited by the subordination provisions of the indenture;
- we fail to provide the notice that we are required to give in the event of a "change in control," whether or not the notice is prohibited by the subordination provisions of the indenture;
- we fail to perform any agreement or other covenant in the notes or the indenture and that failure continues for 60 days after written notice to us by the trustee or by the holders of at least 25% in aggregate principal amount of outstanding notes;
- we or any of our significant subsidiaries fail to pay when due, either at its maturity or upon acceleration thereof, any indebtedness under any bonds, debentures, notes or other evidences of indebtedness for money borrowed (or any guarantee thereof) in excess of \$15 million if the indebtedness is not discharged, or the acceleration is not annulled, within 30 days after written notice to us by the trustee or the holders of at least 25% in aggregate principal amount of the outstanding notes; and
- events of bankruptcy, insolvency or reorganization with respect to us or any of our significant subsidiaries specified in the indenture. See "Description of Notes -- Events of Default."

Symbol for our common stock.....

Our common stock is quoted on the Nasdaq National Market under the symbol "AEIS".

RECENT DEVELOPMENTS

On January 18, 2002, we completed our acquisition of Aera Japan Limited, a Japanese corporation. The acquisition was effected through our subsidiary AE-Japan, which purchased all of the outstanding stock of Aera. The aggregate purchase price paid by AE-Japan was 5.73 billion Japanese yen (approximately \$44 million, based upon an exchange rate of 130:1), which was funded from our available cash. In connection with the acquisition, AE-Japan assumed approximately \$34 million of Aera's debt. Aera, which is headquartered in Hachioji, Japan, has manufacturing facilities there and manufacturing, sales and service offices in Austin, Texas;

Dresden, Germany; Edinburgh, Scotland; and Bundang, South Korea; and sales and service offices in Kirchheim, Germany; and Hsinchu, Taiwan. Aera supplies the semiconductor capital equipment industry with product lines that include digital mass flow controllers, pressure-based mass flow controllers, liquid mass flow controllers, ultrasonic liquid flow meters and liquid vapor delivery systems.

On March 28, 2002, we acquired Dressler HF Technik GmbH, a privately owned Germany-based provider of power supplies and matching networks, for a purchase price of \$16.75 million. We may pay an additional \$3.25 million if Dressler is able to achieve certain key business objectives by March 30, 2003.

On April 2, 2002, we acquired the additional 40.5% of LITMAS we did not already own. LITMAS, a privately held, North Carolina-based early-stage company, designs and manufactures plasma gas abatement systems and high-density plasma sources. We acquired the 40.5% of LITMAS for approximately 130,000 shares of our common stock. Based on the Nasdaq closing price of our common stock on April 2, 2002 of \$35.16 per share, the purchase price was valued at approximately \$4.6 million.

RISK FACTORS

You should read the "Risk Factors" section, beginning on page 6 of this prospectus, to understand the risks associated with an investment in the notes and our common stock.

RISK FACTORS

In addition to the other information contained or incorporated by reference in this prospectus, you should carefully consider the following risk factors in evaluating an investment in the notes. This prospectus includes "forward-looking statements" within the meanings of Section 27A of the Securities Act of 1933 and

Section 21E of the Securities Exchange Act of 1934. All statements contained or incorporated by reference in this prospectus, 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 or circumstances will continue or change. In some cases, forward-looking statements can be identified by the inclusion of words such as "believe," "expect," "plan," "anticipate," "estimate" and similar words. 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 as unachievable, include the factors described in this section. Other factors, including factors which we do not now consider material, also might 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.

RISKS FACTORS RELATING TO OUR BUSINESS

OUR QUARTERLY OPERATING RESULTS ARE SUBJECT TO SIGNIFICANT FLUCTUATIONS, WHICH COULD NEGATIVELY IMPACT OUR STOCK PRICE AND CONSEQUENTLY THE PRICE OF THE NOTES.

Our quarterly operating results have fluctuated significantly and we expect them to continue to experience significant fluctuations. Downward fluctuations in our quarterly results historically have resulted in decreases in the price of our common stock. Quarterly operating results are affected by a variety of factors, many of which are beyond our control. These factors include:

- changes or slowdowns in economic conditions in the semiconductor and semiconductor capital equipment industries and other industries in which our customers operate;
- the timing and nature of orders placed by major customers;
- changes in customers' inventory management practices;
- customer cancellations of previously placed orders and shipment delays;
- pricing competition from our competitors;
- component shortages resulting in manufacturing delays;
- the introduction of new products by us or our competitors;
- costs incurred by responding to specific feature requests by customers; and
- declines in macroeconomic conditions.

In addition, companies in the semiconductor capital equipment industry and other electronics companies experience pressure to reduce costs. Our customers exert pressure on us to reduce prices, shorten delivery times and extend payment terms. These pressures could lead to significant changes in our operating results from quarter to quarter. These changes often occur quickly and make it difficult for us to predict our revenues or operating results. For example, our ability to predict future operating results is quite low given the current uncertainty in virtually all forms of technology spending.

In the past, we have incurred charges and costs related to events such as acquisitions, restructuring and storm damages. In addition, we have from time to time incurred charges and

costs related to new technologies that are being developed by others. The occurrence of similar events in the future could adversely affect our operating results in the applicable quarter.

Our operating results in one or more future quarters may fall below the expectations of analysts and investors. In those circumstances, the trading price of our common stock would likely decrease and, as a result, any trading price of the convertible notes may decrease.

THE SEMICONDUCTOR AND SEMICONDUCTOR CAPITAL EQUIPMENT INDUSTRIES ARE HIGHLY VOLATILE, AND OUR OPERATING RESULTS ARE AFFECTED TO A LARGE EXTENT BY EVENTS IN THOSE INDUSTRIES.

The semiconductor industry historically has been highly volatile and has experienced periods of oversupply resulting in significantly reduced demand for semiconductor capital equipment. These reductions, in turn, have significantly reduced demand for our systems. A rapid decrease in demand for our products can occur with limited advance notice because we supply subsystems to equipment manufacturers and make a portion of our shipments on a just-in-time basis. This decrease in demand can adversely impact our business and financial results disproportionately because of its unanticipated nature.

During downturns, some of our customers have drastically reduced their orders to us and have implemented substantial cost reduction programs. The semiconductor industry is currently involved in one of the most significant downturns in its history and there is no reason to believe that this situation will significantly improve in the near term. Sales to customers in the semiconductor capital equipment industry accounted for 59% of our total sales in 2001, 70% in 2000 and 65% in 1999. We expect that our business will continue to depend significantly on the semiconductor and semiconductor capital equipment industries for the foreseeable future.

THE MARKET PRICE OF OUR COMMON STOCK IS HIGHLY VOLATILE, WHICH COULD LEAD TO FLUCTUATING PRICES OF THE NOTES, LOSSES FOR INDIVIDUAL INVESTORS AND COSTLY SECURITIES CLASS ACTION LITIGATION.

The market for technology stocks, including our common stock, has experienced significant price and volume fluctuations. These fluctuations often have been unrelated or disproportionate to the operating performance of the companies. From our IPO in November 1995 through April 17, 2002, the closing prices of our common stock on the Nasdaq National Market have ranged from \$3.50 to \$73.25. The market for our common stock, and any market for the notes, likely will continue to be subject to fluctuations. Many factors could cause the trading price of our common stock and the notes to fluctuate substantially, including the following:

- future announcements concerning our business, technology, customers or competitors;
- variations in our operating results;
- introduction of new products or changes in product pricing policies by us, our competitors or our customers;
- changes in earnings estimates by securities analysts or announcements of operating results that are not aligned with the expectations of analysts and investors;
- reduced spending for consumer electronic items;
- the economic and competitive conditions in the industries in which our customers operate; and
- general stock market trends.

In the past, following periods of volatility in the market price of a particular company's securities, securities class action litigation often has been brought against that company. Many technology companies have been subject to this type of litigation. We may also become involved in this type of litigation. Litigation is often expensive and diverts management's attention and

resources, which could significantly harm our business, financial condition and results of operations.

A SIGNIFICANT PORTION OF OUR SALES IS CONCENTRATED AMONG A FEW CUSTOMERS.

Our ten largest customers accounted for 53% of our total sales in 2001, 72% in 2000 and 67% in 1999. Our largest customer, Applied Materials, accounted for 24% of our total sales in 2001, 39% in 2000 and 34% in 1999. The loss of any of these customers or a material reduction in any of their purchase orders would significantly harm our business, financial condition and results of operations.

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. Our primary competitors are ENI, a subsidiary of MKS Instruments, Inc.; Applied Science and Technology (ASTeX), another subsidiary of MKS Instruments; Huettinger Elektronik; Shindengen; Kyosan Electric; Comdel; STEC; Kinetics; Mykrolis; and Daihen. We expect that our competitors will continue to develop new products in direct competition with ours, improve the design and performance of their systems and introduce new systems with enhanced performance characteristics.

To remain competitive, we need to continue to improve and expand our systems and system offerings. In addition, we 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 may not be able to make the technological advances and investments necessary to remain competitive.

New products developed by competitors or more efficient production of their products could increase pressure on the pricing of our systems. In addition, electronics companies, including companies in the semiconductor capital equipment industry, have been facing pressure to reduce costs. Either of these factors may require us to make significant price reductions to avoid losing orders. Further, our current and prospective customers consistently exert pressure on us to lower prices, shorten delivery times and improve the capability of our systems. Failure to respond adequately to these pressures could result in a loss of customers or orders.

WE RECENTLY ACQUIRED A NUMBER OF COMPANIES AND TECHNOLOGIES, AND PLAN TO CONTINUE SEEKING ACQUISITIONS, BUT MIGHT NOT BE ABLE TO INTEGRATE OUR ACQUISITIONS SUCCESSFULLY OR EFFICIENTLY.

We have significantly expanded our product offerings through acquisitions and continue to seek acquisition opportunities actively. Prior to 1997, we did not make any significant acquisitions. In the three years from 1997 through 1999, we acquired five companies. In 2000 and 2001, we acquired three companies and entered into a strategic partnership arrangement with one other company. In January 2002, we acquired Aera Japan Limited, a Japanese corporation with approximately \$110 million in revenues in its fiscal year ended June 2001 and approximately 220 employees in six locations worldwide.

Integrating the companies and technologies that we have acquired has placed substantial demands on our management team. Further, the increased pace of our acquisitions has required us to try to integrate multiple acquisitions simultaneously. This has decreased the time and effort that management can give to integrating each acquisition, while continuing to manage our existing business.

Some of our acquisitions have been in technology and geographic markets in which we have limited experience. We might not be able to compete successfully in these markets or operate the acquired businesses efficiently. While we may be able to reduce some costs through consolidation, such as the elimination of redundant locations and personnel, other unanticipated

costs of operating acquired companies or integrating them into our operations may emerge after acquisition. Our business and results of operations could be adversely affected if integrating our acquisitions results in substantial costs, delays or other operational or financial problems.

Future acquisitions could place additional strain on our operations and management. Our ability to manage future acquisitions will depend on our success in:

- evaluating new markets and investments;
- monitoring operations of acquired companies;
- controlling costs and unanticipated expenses of acquired companies;
- integrating acquired operations and personnel;
- retaining existing customers and strategic partners of acquired companies;
- maintaining effective quality controls of acquired companies; and
- expanding our internal management, technical and accounting systems.

FUTURE ACQUISITIONS MAY RESULT IN DILUTION TO OUR EXISTING STOCKHOLDERS, ADVERSELY AFFECT OUR FINANCIAL RESULTS OR THE MARKET PRICE OF OUR SECURITIES OR LIMIT OUR FINANCIAL FLEXIBILITY.

In connection with future acquisitions we may issue equity securities, incur or assume debt, recognize substantial one-time expenses or create goodwill or other intangible assets that could result in significant amortization expense or future charges for impairment. Parties to whom we issue equity securities in acquisitions may seek to liquidate their ownership following an acquisition, which may lead to increased pressure on the market price of our stock and the notes. We plan to increase the number of shares of our common stock authorized for issuance to 70 million shares. The issuance of these shares, in an acquisition or otherwise, would have a dilutive effect on the voting power of our current stockholders. The market price of our securities may also decline upon announcement of an acquisition if investors do not view it favorably. Also, many acquisition opportunities are for foreign companies or for divisions of larger companies, for whom cash is generally a more attractive consideration than securities. The use of cash for these acquisitions may reduce our future financial flexibility.

WE MIGHT NOT BE SUCCESSFUL IN ACQUIRING THE COMPANIES OR DEVELOPING THE TECHNOLOGIES NECESSARY TO IMPLEMENT OUR BUSINESS STRATEGY.

We continue to look for ways to expand our product offerings to existing customers, to new customers and into new markets through acquisitions, internal development and refinement of technologies, and sales and marketing efforts. However, whether or not we are successful in implementing our goal of becoming a single-source provider of integrated solutions will depend on many factors, several of which are out of our control. For example, we may not be able to identify or acquire companies or develop internally products which complement our present product offerings. If we identify appropriate target companies or technologies, we may not be able to afford to acquire them or may be otherwise unsuccessful in doing so due to market conditions, competition, failure to agree on terms and other circumstances. Implementation of our growth, acquisition and product integration strategy may be delayed or altered as these factors affect management's acquisition and development decision.

OUR NEWLY ACQUIRED FOREIGN OPERATIONS, AS WELL AS OUR FOREIGN SALES AND SERVICE OFFICES, PRESENT DIFFICULTIES THAT WE HAVE LIMITED EXPERIENCE ADDRESSING.

Our acquisition of Aera Japan Limited significantly increased our operations outside of the United States. In addition to our operations in Japan, we maintain sales and service offices in Germany, South Korea, the United Kingdom, Taiwan and China. In implementing our business

strategy, we may acquire other companies or relocate some of our current domestic operations outside of the United States.

Our foreign operations subject us to risks and uncertainties that we have limited experience addressing. For example, we face greater difficulty outside the United States:

- managing and staffing our offices;
- safeguarding our intellectual property;
- understanding and complying with local business customs and laws; and
- competing for customers and supplies with companies based in the foreign country.

In addition, our foreign operations are subject to risks in each country, including:

- currency controls and exchange rate fluctuations;
- government regulations and controls; and
- political and economic instability.

Our ability to integrate the operations of Aera Japan Limited and our overall financial results might be adversely affected if we are unable to address these difficulties and risks successfully.

WE MIGHT NOT BE ABLE TO COMPETE SUCCESSFULLY IN INTERNATIONAL MARKETS OR MEET THE SERVICE AND SUPPORT NEEDS OF OUR INTERNATIONAL CUSTOMERS.

Our customers increasingly require service and support on a worldwide basis as the markets in which we compete become increasingly globalized. Our success in competing in international markets is subject to our ability to manage various risks and difficulties, including:

- compliance with product safety requirements and standards that are different from those of the United States;
- barriers to entry;
- import and export requirements and controls;
- trade restrictions;
- collecting past due accounts receivable from foreign customers; and
- changes in tariffs and taxes.

Sales to customers outside the United States accounted for 36% of our total sales in 2001, 28% in 2000 and 27% in 1999. As a result of our acquisition of Aera Japan Limited, we expect international sales to represent a larger portion of our future sales. Providing support services for our systems on a worldwide basis also is subject to various risks, including:

- our ability to hire qualified support personnel;
- maintenance of our standard level of support;
- difficulties managing overseas distributors and representatives; and
- differences in local customs and practices.

Our ability to implement our business strategies and maintain market share will be jeopardized if we are unable to manage these risks successfully.

FLUCTUATIONS IN THE CURRENCY EXCHANGE RATE BETWEEN THE U.S. DOLLAR AND FOREIGN CURRENCIES COULD ADVERSELY AFFECT OUR OPERATING RESULTS.

A portion of our sales is subject to currency exchange risk as a result of our international operations. Approximately 25% of our revenues in 2001 were subject to this risk. As a result of our expanded international operations and sales, including through the acquisition of Aera Japan Limited, we expect a greater portion of our future revenues to be subject to this risk.

We have experienced fluctuations in foreign currency exchange rates, particularly against the Japanese yen, which have negatively affected our operating results from time to time. We have in the past entered into various forward foreign exchange contracts to mitigate currency fluctuations in the yen and intend to continue to do so. We have not employed derivative techniques with respect to any other currencies. Our current or any future derivative techniques might not protect us adequately against substantial currency fluctuations.

SHORTAGES OF COMPONENTS NECESSARY FOR OUR PRODUCT ASSEMBLY CAN DELAY OUR SHIPMENTS.

Manufacturing our products and control systems for the semiconductor capital equipment industry requires numerous electronic components. Dramatic growth in the electronics industry has significantly increased demand for these components. This demand has resulted in periodic shortages and allocations of needed components, and we expect to experience additional shortages and allocations from time to time. Shortages and allocations could cause shipping delays for our systems, adversely affecting our results of operations. Shipping delays also could damage our relationships with current and prospective customers.

OUR DEPENDENCE ON SOLE AND LIMITED SUPPLIERS COULD AFFECT OUR ABILITY TO MANUFACTURE PRODUCTS AND SYSTEMS.

We rely on sole and limited source suppliers for some of our components and subassemblies that are critical to the manufacturing of our systems. This reliance involves several risks, including the following:

- the potential inability to obtain an adequate supply of required components;
- reduced control over pricing and timing of delivery of components; and
- the potential inability of our suppliers to develop technologically advanced products to support our growth and development of new systems.

We believe that in time we could obtain and qualify alternative sources for most sole and limited source parts or could manufacture the parts ourselves. Seeking alternative sources or commencing internal manufacture of the parts could require us to redesign our systems, resulting in increased costs and likely shipping delays. We may be unable to manufacture the parts internally or redesign our systems, which could result in further costs and shipping delays. These increased costs would decrease our profit margins if we could not pass the costs to our customers. Further, shipping delays could damage our relationships with current and potential customers and have a material adverse effect on our business and results of operations.

OUR CURRENT AND FUTURE INVESTMENTS IN EARLY-STAGE COMPANIES MIGHT NOT BE ECONOMICALLY OR OTHERWISE REWARDING AND MIGHT CAUSE US TO REALIZE LOSSES.

We have invested in early-stage companies that develop products and technologies that we believe may provide us with future benefits. These investments may not provide us with any benefit, and we may not achieve any economic return on any of these investments. Our investments in these early-stage companies are subject to all of the risks inherent in investing in companies that are not established. We could lose all or any part of our investments in these companies. Over the last twelve months the implied value of a number of early-stage companies

has decreased dramatically and a number of technology companies have been forced to write off all or a portion of their investments in these companies. In 2001, we recorded a writedown related to an investment in an early-stage company totalling \$6.8 million.

As we make additional investments, we may be required to reflect all or a portion of such investments as a charge against earnings or record our share of the early stage company's income or losses. As of December 31, 2001, the aggregate book value of our investments in early stage companies was \$1.1 million.

WE ARE HIGHLY DEPENDENT ON OUR INTELLECTUAL PROPERTY BUT MAY NOT BE ABLE TO PROTECT IT ADEQUATELY.

Our success depends in part 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 some other countries. The costs of applying for patents in foreign countries and translating the applications into foreign languages require us to select carefully the inventions for which we apply for patent protection and the countries in which we seek protection. Generally, we have concentrated our efforts to obtain international patents in the United Kingdom, Germany, France, Italy and Japan because there are other manufacturers and developers of similar products and control systems in those countries, as well as customers for those systems. Our inability or failure to obtain adequate patent protection in a particular country could threaten our ability to compete effectively in that country.

Our patents also might not be sufficiently broad to protect our technology, and any existing or future patents might be challenged, invalidated or circumvented. Additionally, our rights under our patents may not provide meaningful competitive advantages.

INTELLECTUAL PROPERTY LITIGATION IS COSTLY.

We do not believe that any of our products are infringing any patents or proprietary rights of others, although infringements may exist or might occur in the future and are currently alleged in a litigation in which we are a defendant. Litigation may be necessary to enforce patents issued to us, to protect our trade secrets or know-how, to defend ourselves against claimed infringement of the rights of others or to determine the scope and validity of the proprietary rights of others. This type of litigation often requires substantial management time and attention, as well as financial and other resources. We currently are in litigation with a subsidiary of MKS Instruments. The litigation involves our inductively coupled plasma source product line, which has represented less than 5% of our total revenues since January 1, 2000. This and other litigation in the future may result in substantial costs and division of our efforts.

An adverse determination in any current or future litigation could cause us to lose proprietary rights, subject us to significant liabilities to third parties, require us to seek licenses or alternative technologies from others or prevent us from manufacturing or selling our products and impact future revenue. Any of these events could threaten our business, financial condition and results of operations.

WE MUST CONSTANTLY DEVELOP AND SELL NEW SYSTEMS IN ORDER TO KEEP UP WITH RAPID TECHNOLOGICAL CHANGE.

The markets for our systems and the markets in which our customers compete are characterized by ongoing technological developments and changing customer requirements. We must continue to improve existing systems and to develop new systems that keep pace with

technological advances and meet the needs of our customers in order to succeed. We might not be able to continue to improve our systems or develop new systems. The systems we do develop might not be cost-effective or introduced in a timely manner. Developing and introducing new systems may involve significant and uncertain costs. Our business, financial condition and results of operations, as well as our customer relationships, could be adversely affected if we fail to develop or introduce improved systems and new systems in a timely manner.

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 often must work with these manufacturers early in their design cycles to modify our equipment to meet the requirements of the new systems. Manufacturers typically choose one or two vendors to provide the power conversion equipment 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.

We typically must customize our systems for particular customers to use in their equipment to achieve design wins. This customization increases our research and development expenses and can strain our engineering and management resources. These investments do not always result in design wins.

Once a manufacturer chooses a power conversion and control system for use in a particular product, it is likely to retain that system for the life of that product. Our sales and growth could experience material and prolonged adverse effects if we fail to achieve design wins. In addition, 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.

OUR EFFORTS TO BE RESPONSIVE TO CUSTOMERS MAY LEAD TO INCURRING COSTS THAT ARE NOT READILY RECOVERABLE.

We may incur manufacturing overhead and other costs, many of which are fixed, to meet anticipated customer demand. Accordingly, operating results could be adversely affected if orders or revenues in a particular period or for a particular system do not meet expectations.

We often require long lead times for development of our systems during which times we must expend substantial funds and management effort. We may incur significant development and other expenses as we develop our systems without realizing corresponding revenue in the same period, or at all.

OUR SUCCESS DEPENDS UPON OUR ABILITY TO ATTRACT AND RETAIN KEY PERSONNEL.

Our success depends upon the continued efforts of our senior management team and our technical, marketing and sales personnel. These employees may voluntarily terminate their employment with us at any time. Our success also depends on our ability to attract and retain additional highly qualified management, technical, marketing and sales personnel. The process of hiring employees with the combination of skills and attributes required to carry out our strategy can be extremely competitive and time-consuming. We may not be able to successfully retain existing personnel or identify, hire and integrate new personnel. If we lose the services of key personnel for any reason, including retirement, or are unable to attract additional qualified

personnel, our business, financial condition and results of operations could be materially and adversely affected.

WE CONDUCT MANUFACTURING AT ONLY A FEW SITES AND OUR SITES ARE NOT GENERALLY INTERCHANGEABLE.

We conduct the majority of our manufacturing at our facilities in Fort Collins and Longmont, Colorado; Voorhees, New Jersey; and Vancouver, Washington. In connection with the acquisition of Aera, we now have major manufacturing facilities in Hachioji, Japan and Austin, Texas; and smaller sites in Bundang, South Korea; Dresden, Germany; and Edinburgh, Scotland. Each facility generally manufactures different systems and, therefore, is not readily interchangeable. In July 1997, a severe rainstorm in Fort Collins caused substantial damage to our Fort Collins facilities and to some equipment and inventory. The damage caused us to stop manufacturing at that facility temporarily and prevented us from resuming full production there until mid-September 1997. Our insurance policies did not cover all of the costs that we incurred in connection with the rainstorm. Future natural or other uncontrollable occurrences at any of our primary manufacturing facilities that negatively impact our manufacturing processes may not be fully covered by insurance and could cause significant harm to our operations and results of operations.

WE MUST MAINTAIN MINIMUM LEVELS OF CUSTOMIZED INVENTORY TO SUPPORT SOME CUSTOMER DELIVERY REQUIREMENTS.

We must keep a relatively large number and variety of customized systems in our inventory to meet client delivery requirements. Our inventory may become obsolete as we develop new systems and as our customers develop new systems. Inventory obsolescence could have a material adverse effect on our financial condition and results of operations. For example, charges for obsolete and excess inventory were \$6.4 million in 2001, \$654,000 in 2000 and \$1.5 million in 1999, which affected gross margins by 3.3%, 0.2% and 0.8% in these years.

WARRANTY COSTS ON CERTAIN PRODUCTS MAY BE EXCESSIVE.

Recently we have experienced higher than expected levels of warranty costs on certain products that had been extensively redesigned. These products had technical problems that we were able to correct, and we took action to repair, rework, and in some cases, replace the products. Warranty costs in 2001, which are included in our cost of sales, were higher than historical levels. If similar problems persist for any of our products in the future, our results of operations may be materially 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 must ensure that our systems meet safety and emissions standards, many of which vary across the states and countries in which our systems are used. For example, the European Union has published directives specifically relating to power supplies. We must comply with these directives in order to ship our systems into countries that are members of the European Union. In the past, we have invested significant resources to redesign our systems 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 systems, 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 systems in specified markets.

WE LEASE OUR FORT COLLINS, COLORADO FACILITIES AND A CONDOMINIUM FROM ENTITIES IN WHICH TWO INDIVIDUALS WHO ARE INSIDERS AND MAJOR STOCKHOLDERS HAVE FINANCIAL INTERESTS.

We lease our executive offices and manufacturing facilities in Fort Collins, Colorado from Prospect Park East Partnership and from Sharp Point Properties, LLC. Douglas S. Schatz, our Chairman, President and Chief Executive Officer, holds a 26.7% interest in each of the leasing entities. G. Brent Backman, a member of our board of directors, holds a 6.6% interest in each of the leasing entities. Aggregate rental payments under these leases for 2001 totaled approximately \$2.23 million. We also lease a condominium in Breckenridge, Colorado to provide rewards and incentives to our customers, suppliers and employees. We lease the condominium from AEI Properties, a partnership in which Mr. Schatz holds a 60% interest and Mr. Backman holds a 40% interest. Aggregate payments under the condominium lease for 2001 totaled approximately \$47,000. As of December 31, 2001, Mr. Schatz owned approximately 34.7% of our common stock, and Mr. Backman owned approximately 3.8% of our common stock. It is possible that the interests of these individuals may not coincide with our interests with respect to these properties.

OUR EXECUTIVE OFFICERS AND DIRECTORS OWN A SIGNIFICANT PERCENTAGE OF OUR OUTSTANDING COMMON STOCK, WHICH COULD ENABLE THEM TO CONTROL OUR BUSINESS AND AFFAIRS.

Our executive officers and directors owned approximately 39.8% of our common stock outstanding as of December 31, 2001. Douglas S. Schatz, our Chairman, President and Chief Executive Officer, owned approximately 34.7% of our common stock outstanding as of December 31, 2001. These stockholdings give our executive officers and directors collectively, and Mr. Schatz individually, significant voting power. Depending on the number of shares that abstain or otherwise are not voted on a particular matter, our executive officers collectively may be able to elect all of the members of our board of directors and to control our business affairs for the foreseeable future.

RISK FACTORS RELATING TO THE NOTES

WE HAVE INCREASED OUR LEVERAGE AS A RESULT OF THE SALE OF THE NOTES.

In connection with the sale of the notes, we incurred \$125 million of indebtedness. As a result of this indebtedness, our principal and interest payment obligations increased and such debt increased from \$81.6 million to \$206.6 million at that time. The degree to which we are leveraged could adversely affect our ability to obtain financing for working capital, acquisitions or other purposes and could make us more vulnerable to industry downturns and competitive pressures. Our ability to meet our debt service obligations will be dependent upon our future performance, which will be subject to the financial, business and other factors affecting our operations, many of which are beyond our control.

THE NOTES RANK BELOW OUR SENIOR DEBT AND LIABILITIES OF OUR SUBSIDIARIES, AND WE MAY BE UNABLE TO REPAY OUR OBLIGATIONS UNDER THE NOTES.

The notes are unsecured and subordinated in right of payment to all of our senior debt, as described in this prospectus, including senior debt we may incur in the future. Because the notes are subordinate to senior debt, in the event of

(1) our bankruptcy, liquidation or reorganization,

(2) acceleration of the notes due to an event of default under the indenture or
(3) some other events, we will make payments on the notes only after we have satisfied all of our senior debt obligations. We may not have sufficient assets remaining to pay amounts on any or all of the notes.

In addition, our right to receive assets of any subsidiaries upon their liquidation or reorganization, and the rights of the holders of the notes to share in those assets, would be subject to the satisfaction of claims of the subsidiaries' creditors. Consequently, the notes are subordinate to all liabilities, including trade payables, of any of our subsidiaries and any subsidiaries that we may in the future acquire or establish.

The notes will be our obligations exclusively. The indenture for the notes does not limit our ability to incur senior debt, or our ability or that of any of our presently existing or future subsidiaries, to incur other indebtedness and other liabilities. We may have difficulty paying our obligations under the notes if we, or any of our subsidiaries, incur additional indebtedness or liabilities. As of December 31, 2001, we had no senior debt outstanding and the aggregate amount of indebtedness and other liabilities of our subsidiaries was approximately \$10.6 million (excluding intercompany liabilities). As part of the acquisition of Aera Japan Ltd., Advanced Energy assumed approximately \$34 million of senior debt. We and our subsidiaries may incur additional indebtedness, including senior debt, which could adversely affect our ability to pay our obligations under the notes.

WE MAY BE UNABLE TO REPAY OR REPURCHASE THE NOTES.

At maturity, the entire outstanding principal amount of the notes will become due and payable by us. In addition, if a "change in control," as defined in the indenture, occurs, each holder of the notes may require that we repurchase all or a portion of that holder's notes. We cannot assure you that we will have sufficient funds or will be able to arrange for additional financing to pay the principal amount or repurchase price due. Under the terms of the indenture for the notes, we may elect, if we meet particular conditions, to pay the repurchase price with shares of common stock. Any future borrowing arrangements or agreements relating to senior debt to which we become a party may contain restrictions on, or prohibitions against, our repayment or repurchase of the notes. In the event that the maturity date or "change in control" occurs at a time when we are prohibited from repaying or repurchasing the notes, we could attempt to obtain the consent of the lenders under those arrangements to purchase the notes or we could attempt to refinance the borrowings that contain the restrictions. If we do not obtain the necessary consents or refinance these borrowings, we will be unable to repay or repurchase the notes. In that case, our failure to repay the notes at maturity or to repurchase any tendered notes would constitute an event of default under the indenture. Any default, in turn, may cause a default under the terms of our senior debt. As a result, in these circumstances, the subordination provisions of the indenture would, absent a waiver, prohibit the repayment or repurchase of the notes until we pay the senior debt in full.

THERE MAY BE NO PUBLIC MARKET FOR THE NOTES.

Although the initial purchaser of the notes advised us at the time of the issuance of the notes that it then intended to make a market in the notes, it is not obligated to do so and may discontinue market making activities at any time without notice. The notes will not trade publicly until they are sold pursuant to this registration statement or another exemption from registration is available, and the liquidity of any public market will depend on the volume and timing of such sales. Consequently, we cannot ensure that any public market for the notes will develop or, if one does develop, that it will be liquid or maintained. If an active public market for the notes fails to develop or be sustained, the trading price of the notes, as well as your ability to sell your notes, could be materially and adversely affected. We do not intend to apply for listing of the notes on any securities exchange or any automated quotation system.

IF LESS THAN ALL THE NOTES ARE TO BE REDEEMED BY ADVANCED ENERGY PURSUANT TO THE PROVISIONAL REDEMPTION OR NON-PROVISIONAL REDEMPTION PROVISIONS OF THE INDENTURE, YOUR NOTES MAY OR MAY NOT BE SELECTED TO BE REDEEMED.

The indenture relating to the notes provides that if less than all the notes are to be redeemed pursuant to the provisional redemption or non-provisional redemption provisions of the indenture, the particular notes to be redeemed will be selected by the trustee by lot or by any other method the trustee may deem fair and appropriate. As a consequence, in some cases it is possible that some or all of your notes may not be redeemed while notes belonging to other holders are redeemed. For any notes that are not redeemed, you would not be eligible to receive the "make whole" payment required in the case of provisional redemptions or the premium over the principal amount received in connection with non-provisional redemptions. In addition, you would continue to hold notes for which, as discussed in the risk factor above, there may be no public market.

ANTI-TAKEOVER PROVISIONS LIMIT THE ABILITY OF A PERSON OR ENTITY TO ACQUIRE CONTROL OF US AND MAY ADVERSELY AFFECT THE VALUE OF OUR COMMON STOCK AND CONSEQUENTLY THE NOTES.

Our certificate of incorporation and bylaws include provisions which:

- allow the board of directors to issue preferred stock with rights senior to those of the common stock without any vote or other action by the holders of the common stock;
- limit the right of our stockholders to call a special meeting of stockholders; and
- impose procedural and other requirements that could make it difficult for stockholders to effect particular corporate actions.

In addition, we are subject to the anti-takeover provisions of the Delaware General Corporation Law. Any of these provisions could delay or prevent a person or entity from acquiring control of us. The effect of these provisions may be to limit the price that investors are willing to pay in the future for our securities. These provisions might also discourage potential acquisition proposals or could diminish the opportunities for our stockholders to participate in a tender offer, even if the acquisition proposal or tender offer is at a price above the then current market price for our common stock.

DISCLOSURE REGARDING FORWARD-LOOKING STATEMENTS

In addition to the other information contained or incorporated by reference in this prospectus, you should carefully consider the risk factors disclosed in this prospectus, including those beginning on page 6, in evaluating an investment in the notes or the common stock issuable upon conversion of the notes. This prospectus includes "forward-looking statements" within the meaning of Section 27A of the Securities Act of 1933, as amended, or the Securities Act, and Section 21E of the Securities Exchange Act of 1934, as amended, or the Exchange Act. All statements contained or incorporated by reference in this prospectus, 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 or circumstances will continue or change. In some cases, forward-looking statements can be identified by the inclusion of words such as "believe," "expect," "plans," "anticipate," "estimate" and similar words. Some of the forward-looking statements in this prospectus are expectations or projections relating to:

- customer inventory levels, needs and order levels;
- our future revenues;
- our future gross profit;

- research and development expenses;
- selling, marketing, general and administrative expenditures;
- capital resources sufficiency;
- potential acquisitions;
- capital expenditures; and
- restructuring activities and expenses.

Our actual results could differ materially from these 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 also might 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.

USE OF PROCEEDS

We will not receive any proceeds from the sale of the notes or the shares of common stock offered by this prospectus. See "Selling Security Holders".

RATIO OF EARNINGS TO FIXED CHARGES

The following table sets forth our ratio of earnings to fixed charges for the periods indicated.

	FOR THE YEARS ENDED DECEMBER 31,					
	2001	2000	1999	1998	1997	1996
Ratio of earnings to fixed charges(1)....	N/A	11.86x	18.77x	N/A	28.82x	19.82x

(1) The ratio of earnings to fixed charges is calculated by dividing our "earnings," as described below, by our "fixed charges," as described below. For the purposes of this ratio, we calculate "earnings" as our pretax income from continuing operations before fixed charges; less minority interests in income of subsidiaries (unless the subsidiary has fixed charges), minority interests in losses of subsidiaries and income or loss from equity investees. We calculate "fixed charges" by adding (1) our interest expense, (2) the amount of amortization of deferred debt issuance cost and (3) the portion of rental expense under our operating leases that we have deemed to be representative of the interest factor for these leases. Our earnings, as defined, were insufficient to cover our fixed charges by \$14,547,000 and \$48,820,000 for the year ended December 31, 1998 and the year ended December 31, 2001, respectively.

DESCRIPTION OF NOTES

The notes were issued under an indenture between us and State Street Bank and Trust Company of California, N.A., as trustee. Because this section is a summary, it does not describe every aspect of the notes and the indenture. The following summaries of provisions of the indenture do not purport to be complete and are subject to, and are qualified in their entirety by reference to, the detailed provision of the notes and the indenture, including the definitions therein of terms.

GENERAL

The notes are general, unsecured obligations of Advanced Energy Industries, Inc. The notes are subordinated, which means that they rank behind some of our indebtedness as described below. The notes are limited to \$125,000,000 aggregate principal amount. We are required to repay the principal amount of the notes in full on September 1, 2006.

The notes bear interest at 5.00% per annum from the date of original issuance, August 27, 2001. We will pay interest on the notes on March 1 and September 1 of each year, commencing on March 1, 2002. Interest payable per \$1,000 principal amount of notes for the period from August 27, 2001 to March 1, 2002 will be \$25.5556.

You may convert the notes into shares of our common stock initially at the conversion rate of 33.5289 shares per each \$1,000 principal amount of notes at any time before the close of business on the maturity date, unless the notes have been previously redeemed or repurchased. Holders of notes called for redemption or submitted for repurchase will be entitled to convert the notes up to and including the business day immediately preceding the date fixed for redemption or repurchase, as the case may be. The conversion rate may be adjusted as described below.

We may redeem the notes at our option at any time on or after September 4, 2004, in whole or in part, at the redemption prices set forth below under "-- Optional Redemption by Advanced Energy," plus accrued and unpaid interest to the redemption date. If there is a change in control of us, you will have the right to require us to repurchase your notes as described below under "-- Repurchase at Option of Holders Upon a Change in Control." We may redeem some or all of the notes at any time before September 4, 2004 at a redemption price of \$1,000 per \$1,000 principal amount of notes, plus accrued and unpaid interest, if any, to the redemption date, if the closing price of our common stock has exceeded 150% of the conversion price then in effect for at least 20 trading days within a period of 30 consecutive trading days ending on the trading day before the date of mailing of the provisional redemption notice. We will make an additional payment in cash or common stock with respect to the notes called for provisional redemption in an amount equal to \$150.56 per \$1,000 principal amount of notes, less the amount of any interest paid on the notes.

FORM, DENOMINATION, TRANSFER, EXCHANGE AND BOOK-ENTRY PROCEDURES

The notes have been issued:

- only in fully registered form;
- without interest coupons; and
- in denominations of \$1,000 and greater multiples.

The notes are evidenced by one or more global notes, which are deposited with the trustee as custodian for The Depository Trust Company, or DTC, and registered in the name of Cede & Co., as nominee of DTC. The global note and any notes issued in exchange for the global note are subject to restrictions on transfer and bear the legend regarding those restrictions set forth under "Notice to Investors." Except as set forth below, record ownership of the global note may

be transferred, in whole or in part, only to another nominee of DTC or to a successor of DTC or its nominee.

The global note may not be registered in the name of any person, nor may it be exchanged for notes that are registered in the name of any person, other than DTC or its nominee unless either of the following occurs:

- DTC notifies us that it is unwilling, unable or no longer qualified to continue acting as the depositary for the global note; or
- an event of default with respect to the notes represented by the global note has occurred and is continuing.

In those circumstances, DTC will determine in whose names any securities issued in exchange for the global note will be registered.

DTC or its nominee is considered the sole owner and holder of the global note for all purposes, and as a result:

- you cannot have notes registered in your name if they are represented by the global note;
- you cannot receive physical certificated notes in exchange for your beneficial interest in the global note;
- you will not be considered to be the owner or holder of the global note or any note it represents for any purpose; and
- all payments on the global note will be made to DTC or its nominee.

The laws of some jurisdictions require that particular kinds of purchasers, such as insurance companies, can only own securities in definitive certificated form. These laws may limit your ability to transfer your beneficial interests in the global note to these types of purchasers.

Only institutions, such as a securities broker or dealer, that have accounts with DTC or its nominee (called participants) and persons that may hold beneficial interests through participants can own a beneficial interest in the global note. The only place where the ownership of beneficial interests in the global note will appear and the only way the transfer of those interests can be made will be on the records kept by DTC (for their participants' interests) and the records kept by those participants (for interests of persons held by participants on their behalf).

Secondary trading in bonds and notes of corporate issuers is generally settled in clearinghouse (that is, next-day) funds. In contrast, beneficial interests in a global note usually trade in DTC's same-day funds settlement system, and settle in immediately available funds. We make no representations as to the effect that settlement in immediately available funds will have on trading activity in those beneficial interests.

We will make cash payments of interest on and principal of and the redemption or repurchase price of the global note to Cede, the nominee for DTC, as the registered owner of the global note. We will make these payments by wire transfer of immediately available funds on each payment date.

We have been informed that DTC's practice is to credit participants' accounts on the payment date with payments in amounts proportionate to their respective beneficial interests in the notes represented by the global note as shown on DTC's records, unless DTC has reason to believe that it will not receive payment on that payment date. Payments by participants to owners of beneficial interests in notes represented by the global note held through participants will be the responsibility of those participants, as is now the case with securities held for the accounts of customers registered in street name.

We will send any redemption notices to Cede. We understand that if less than all of the notes are being redeemed, DTC's practice is to determine by lot the amount of the holdings of each participant to be redeemed.

We also understand that neither DTC nor Cede will consent or vote with respect to the notes. We have been advised that under its usual procedures, DTC will mail an omnibus proxy to us as soon as possible after the record date. The omnibus proxy assigns Cede's consenting or voting rights to those participants to whose accounts the notes are credited on the record date identified in a listing attached to the omnibus proxy.

Because DTC can only act on behalf of participants, who in turn act on behalf of indirect participants, the ability of a person having a beneficial interest in the principal amount represented by the global note to pledge the interest to persons or entities that do not participate in the DTC book-entry system, or otherwise take actions in respect of that interest, may be affected by the lack of a physical certificate evidencing its interest.

DTC has advised us that it will take any action permitted to be taken by a holder of notes (including the presentation of notes for exchange) only at the direction of one or more participants to whose account with DTC interests in the global note are credited and only in respect of the portion of the principal amount of the notes represented by the global note as to which the participant or participants has or have given direction.

DTC has also advised us as follows:

- DTC is a limited purpose trust company organized under the laws of the State of New York, a member of the Federal Reserve System, a clearing corporation within the meaning of the New York Uniform Commercial Code, as amended, and a clearing agency registered pursuant to the provisions of Section 17A of the Exchange Act;
- DTC was created to hold securities for its participants and facilitate the clearance and settlement of securities transactions between participants through electronic book-entry changes in accounts of its participants;
- Participants include securities brokers and dealers, banks, trust companies and clearing corporations and may include some other organizations;
- Some participants, or their representatives, together with other entities, own DTC; and
- Indirect access to the DTC System is available to other entities such as banks, brokers, dealers and trust companies that clear through or maintain a custodial relationship with a participant, either directly or indirectly.

The policies and procedures of DTC, which may change periodically, will apply to payments, transfers, exchanges and other matters relating to beneficial interests in the global note. We and the trustee have no responsibility or liability for any aspect of DTC's or any participants' records relating to beneficial interests in the global note, including for payments made on the global note. Further, we and the trustee are not responsible for maintaining, supervising or reviewing any of those records.

CONVERSION RIGHTS

You have the option to convert any portion of the principal amount of any note that is an integral multiple of \$1,000 into shares of our common stock at any time on or prior to the close of business on the maturity date, unless the notes have been previously redeemed or repurchased. The conversion rate will be equal to 33.5289 shares per \$1,000 principal amount of notes. The conversion rate is equivalent to a conversion price of approximately \$29.83 per share. Your right to convert a note called for redemption or delivered for repurchase will terminate at the close of business on the business day immediately preceding the redemption date or

repurchase date for that note, unless we default in making the payment due upon redemption or repurchase.

You may convert all or part of any note by delivering the note at the Corporate Trust Office of the trustee in the Borough of Manhattan, The City of New York, accompanied by a duly signed and completed conversion notice, a copy of which may be obtained by the trustee. The conversion date will be the date on which the note and the duly signed and completed conversion notice are so delivered.

As promptly as practicable on or after the conversion date, we will issue and deliver to the trustee a certificate or certificates for the number of full shares of our common stock issuable upon conversion, together with payment in lieu of any fraction of a share. The certificate will then be sent by the trustee to the conversion agent for delivery to the holder. The shares of our common stock issuable upon conversion of the notes will be fully paid and nonassessable and will rank equally with the other shares of our common stock.

If you surrender a note eligible for conversion on a date that is not an interest payment date, you will not be entitled to receive any interest for the period from the interest payment date preceding the conversion date to the conversion date, except as described below in this paragraph. In the case of any eligible note that has been converted after any regular record date but before the following interest payment date, interest payable on the interest payment date shall be payable on the interest payment date notwithstanding such conversion, and interest shall be paid to the holder of the note on the regular record date. However, any eligible note surrendered for conversion during that period between the regular record date and the following interest payment date must be accompanied by payment of an amount equal to the interest on the interest payment date on the principal amount of the notes being surrendered for conversion. This payment is not required in the case of notes that are called for non-provisional redemption or that are to be repurchased and for which your right to convert will terminate during that period between the regular record date and the following interest payment date.

No other payment or adjustment for interest, or for any dividends in respect of our common stock, will be made upon conversion. Holders of our common stock issued upon conversion will not be entitled to receive any dividends payable to holders of our common stock as of any record time or date before the close of business on the conversion date. We will not issue fractional shares upon conversion. Instead, we will pay cash based on the market price of our common stock at the close of business on the conversion date.

You will not be required to pay any taxes or duties relating to the issue or delivery of our common stock on conversion but you will be required to pay any tax or duty relating to any transfer involved in the issue or delivery of our common stock in a name other than yours. Certificates representing shares of our common stock will not be issued or delivered unless all taxes and duties, if any, payable by you have been paid.

The conversion rate will be subject to adjustment for, among other things:

- dividends and other distributions payable in our common stock on shares of our capital stock;
- the issuance to all holders of our common stock of rights, options or warrants entitling them to subscribe for or purchase our common stock at less than the then current market price of the common stock as of the record date for stockholders entitled to receive rights, options or warrants;
- subdivisions, combinations and reclassifications of our common stock;

- distributions to all holders of our common stock of evidences of our indebtedness, shares of capital stock, cash or assets, including securities, but excluding:

- those dividends, rights, options, warrants and distributions referred to above;

- dividends and distributions paid exclusively in cash; and

- distributions upon mergers or consolidations discussed below;

- distributions consisting exclusively of cash, excluding any cash portion of distributions referred to immediately above, or cash distributed upon a merger or consolidation to which the next succeeding bullet point applies, to all holders of our common stock in an aggregate amount that, combined together with:

- other all-cash distributions made within the preceding 365-day period in respect of which no adjustment has been made; and

- any cash and the fair market value of other consideration payable in connection with any tender offer by us or any of our subsidiaries for our common stock concluded within the preceding 365-day period in respect of which no adjustment has been made,

exceeds 10% of our market capitalization, being the product of the current market price per share of the common stock on the record date for the distribution and the number of shares of common stock then outstanding; and

- the successful completion of a tender offer made by us or any of our subsidiaries for our common stock which involves an aggregate consideration that, together with:

- any cash and other consideration payable in a tender offer by us or any of our subsidiaries for our common stock expiring within the 365-day period preceding the expiration of that tender offer in respect of which no adjustment has been made; and

- the aggregate amount of all cash distributions referred to above to all holders of our common stock within the 365-day period preceding the expiration of that tender offer in respect of which no adjustments have been made,

exceeds 10% of our market capitalization on the expiration of the tender offer.

We reserve the right to effect the increases in the conversion rate in addition to those required by the foregoing provisions as we consider to be advisable in order that any event treated for United States federal income tax purposes as a dividend of stock or stock rights will not be taxable to the recipients. We will not be required to make any adjustment to the conversion rate until the cumulative adjustments amount to 1.0% or more of the conversion rate. We will compute all adjustments to the conversion rate and will give notice by mail to holders of the registered notes of any adjustments.

In the event that we consolidate or merge with or into another entity or another entity is merged into us, or in case of any sale or transfer of all or substantially all of our assets, each note then outstanding will become convertible only into the kind and amount of securities, cash and other property receivable upon the consolidation, merger, sale or transfer by a holder of the number of shares of common stock into which the notes were convertible immediately prior to the consolidation or merger or sale or transfer. The preceding sentence will not apply to a merger or sale of all or substantially all of our assets that does not result in any reclassification, conversion, exchange or cancellation of the common stock.

We may increase the conversion rate, meaning that we increase the number of shares of common stock into which the notes are convertible, for any period of at least 20 days if our board of directors determines that the increase would be in our best interest. The board of directors' determination in this regard will be conclusive and may be done at any time without limit as to frequency, including in connection with a call for redemption, subject to applicable

securities laws. We will give holders of notes at least 15 days' notice of an increase in the conversion rate. Any increase, however, will not be taken into account for purposes of determining whether the closing price of our common stock exceeds the conversion price by 105% in connection with an event that otherwise would be a change in control as defined below.

If at any time we make a distribution of property to our stockholders that would be taxable to the stockholders as a dividend for United States federal income tax purposes, such as distributions of evidences of indebtedness or assets by us, but generally not stock dividends on common stock or rights to subscribe for common stock, and, pursuant to the anti-dilution provisions of the indenture, the number of shares into which notes are convertible is increased, that increase may be deemed for United States federal income tax purposes to be the payment of a taxable dividend to holders of notes. See "United States Federal Income Tax Consequences -- U.S. Holders."

SUBORDINATION

The notes are subordinated and, as a result, the payment of the principal, any premium and interest on the notes, including amounts payable on any redemption or repurchase, are subordinate to the prior payment in full, in cash or other payment satisfactory to holders of senior debt, of all of our senior debt to the extent provided in the indenture. The notes are also effectively subordinated to any debt or other liabilities of our subsidiaries, which means that our right to receive assets of any of these subsidiaries in a liquidation is only to the extent that the claims of these subsidiaries' creditors have been satisfied. This subsidiary debt may also contain covenants that limit the ability of the applicable subsidiary to pay dividends to us. As of December 31, 2001, we had no senior debt, \$81.6 million of other subordinated debt and the aggregate amount of indebtedness and other liabilities of our subsidiaries was approximately \$10.6 million (excluding intercompany liabilities). As part of the acquisition of Aera Japan Ltd., Advanced Energy assumed approximately \$34 million of senior debt. The subordination provisions in the notes are similar to but operate independently of the subordination and default provisions in our other subordinated debt. The holders of these notes share equal priority in right of payment with the holders of our other subordinated debt, meaning that neither of the debt is subordinated to the other debt in the case of a default. The maturity of these notes is before the maturity of our other subordinated debt.

"Senior debt" is defined in the indenture to mean: the principal of, and premium, if any, and interest, including all interest accruing subsequent to the commencement of any bankruptcy or similar proceeding, whether or not a claim for post-petition interest is allowable as a claim in any proceeding, on, and all fees and other amounts payable or rent or other obligations, whether absolute or contingent, secured or unsecured, due or to become due, outstanding on the date of the indenture or thereafter created, incurred or assumed in connection with any of the following:

- any credit or loan agreement, note, bond, debenture or other written obligation;
- our incurring obligations for money borrowed;
- any note or similar instrument issued by us in connection with the acquisition of any businesses, properties or assets of any kind;
- our leasing real or personal property:
- under leases if all or a portion of the lessee's rental obligations are required to be capitalized on the balance sheet of the lessee under generally accepted accounting principles; or
- under leases, participation agreements, guarantees or similar documents entered into by us in connection with the leasing of real or personal property by us or any of our subsidiaries which provides that we are contractually obligated to purchase or cause a third party to purchase the leased property for a fixed price or otherwise guarantee a

residual value of leased property to the lessor or a third party, whether or not the lease is properly classified as an operating or capital lease in accordance with generally accepted accounting principles;

- any interest rate and currency swaps, caps, floors, collars, hedge agreements, forward contracts or similar agreements or arrangements;
- any letters of credit, bankers' acceptances and similar facilities, including reimbursement obligations with respect to the foregoing;
- any deferred purchase price of property or services;
- all obligations of the type referred to in the above clauses of another person and any dividends of another person, the payment of which, in either case, we have assumed or guaranteed, or for which we are responsible or liable, directly or indirectly, jointly or severally, as obligor, guarantor or otherwise, or which are secured by a lien on our property; and
- renewals, extensions, modifications, replacements, restatements and refundings of, or any indebtedness or obligation issued in exchange for, any indebtedness or obligation described in the above clauses of this definition.

Senior debt does not include:

- the notes;
- any other indebtedness or obligation if its terms or the terms of the instrument under which or pursuant to which it is issued expressly provide that it is not superior in right of payment to the notes; or
- any trade accounts payable or accrued liabilities arising in the ordinary course of business.

"Designated senior debt" means our obligations under any particular senior debt in which the instrument creating or evidencing the same or the assumption or guarantee thereof, or related agreements or documents to which we are a party, expressly provides that the indebtedness will be designated senior debt for purposes of the indenture. The instrument, agreement or other document evidencing any designated senior debt may place limitations and conditions on the right of the senior debt to exercise the rights of designated senior debt.

We may not make any payment on account of principal, premium or interest, if any, on the notes, or redemption or repurchase of the notes, if:

- we default in our obligations to pay principal, premium, interest or other amounts on our senior debt, including a default under any redemption or repurchase obligation, and the default continues beyond any applicable grace period that we may have to make these payments; or
- any other default occurs and is continuing on any designated senior debt; and
- the default permits the holders of the designated senior debt to accelerate its maturity; and
- the trustee has received a payment blockage notice from us, the holder of debt or another person permitted to give notice under the indenture.

If payments of the notes have been blocked by a payment default on senior debt, payments on the notes may resume when the payment default has been cured or waived or ceases to exist.

If payments on the notes have been blocked by a nonpayment default on designated senior debt, payments on the notes may resume on the earlier of:

- the date the nonpayment default is cured or waived or ceases to exist; or
- 179 days after the payment blockage notice is received.

No nonpayment default that existed on the day a payment blockage notice was delivered to the trustee can be used as the basis for any subsequent payment blockage notice. In addition, once a holder of designated senior debt has blocked payment on the notes by giving a payment blockage notice, no new period of payment blockage can be commenced pursuant to a subsequent payment blockage notice unless and until both of the following are satisfied:

- 365 days have elapsed since the initial effectiveness of the immediately prior payment blockage notice; and
- all scheduled payments of principal, any premium and interest with respect to the notes that have come due have been paid in full in cash.

In addition, all principal, premium, if any, interest and other amounts due on all senior debt must be paid in full in cash before you are entitled to receive any payment otherwise due upon:

- any acceleration of the principal on the notes as a result of an event of default of the notes; or
- any payment or distribution of our assets to creditors upon any dissolution, winding up, liquidation or reorganization, whether voluntary or involuntary, marshaling of assets, assignment for the benefit of creditors, or in bankruptcy, insolvency, receivership or other similar proceedings.

In the event of insolvency, creditors who are holders of senior debt are likely to recover more, ratably, than you because of this subordination. The subordination may result in a reduction or elimination of payments on the notes to you.

In addition, the notes are "structurally subordinated" to all indebtedness and other liabilities of our subsidiaries, including trade payables and lease obligations. This occurs because our right to receive any assets of our subsidiaries upon their liquidation or reorganization, and your right to participate in those assets, are effectively subordinated to the claims of that subsidiary's creditors, including trade creditors, except to the extent that we are recognized as a creditor of the subsidiary. If we are recognized as a creditor of that subsidiary, our claims are subordinate to any security interest in the assets of the subsidiary and any indebtedness of the subsidiary senior to us.

The indenture does not limit our ability to incur senior debt or our ability or the ability of our subsidiaries to incur any other indebtedness.

OPTIONAL REDEMPTION BY ADVANCED ENERGY

PROVISIONAL REDEMPTION

We may redeem any portion of the notes at any time prior to September 4, 2004 upon at least 30 and not more than 60 days' notice by mail to the holders of the notes, at a redemption price equal to 100% of the principal amount of the notes to be redeemed per note plus accrued and unpaid interest to the redemption date if the closing price of our common stock has exceeded 150% of the conversion price for at least 20 trading days in any consecutive 30-day trading period ending on the trading day prior to the mailing of the notice of redemption.

If we redeem the notes under these circumstances, we will make an additional "make whole" payment on the redeemed notes equal to \$150.56 per \$1,000 notes, minus the amount of any interest actually paid or accrued and unpaid on the note prior to the redemption date. We

must make these "make whole" payments on all notes called for redemption, including notes converted after the date we mailed the notice. The "make whole" payment on notes that have been converted shall not be reduced by accrued and unpaid interest. We may make these "make whole" payments, at our option, either in cash or in our common stock or a combination of cash and stock. We will specify the type of consideration for the "make whole" payment in the redemption notice.

Payments made in our common stock will be valued at 95% of the average of the closing sales prices of our common stock for the five consecutive trading days ending on the day prior to the redemption date. If less than all the notes are to be redeemed, the particular notes to be redeemed will be selected by the trustee by lot or by any other method the trustee may deem fair and appropriate.

NON-PROVISIONAL REDEMPTION

On or after September 4, 2004, we may redeem the notes in whole or in part, at the prices set forth below. If we elect to redeem all or part of the notes, we will give at least 30, but no more than 60, days' notice to you.

The redemption price, expressed as a percentage of principal amount, is as follows for the following periods:

PERIOD	REDEMPTION PRICE
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Beginning on September 4, 2004 and ending on August 31, 2005.....	102%
Beginning on September 1, 2005 and ending on August 31, 2006.....	101%

and thereafter is equal to 100% of the principal amount. In each case, we will pay interest to, but excluding the redemption date. If less than all the notes are to be redeemed, the particular notes to be redeemed will be selected by the trustee by lot or by any other method the trustee may deem fair and appropriate.

No sinking fund is provided for the notes, which means that the indenture does not require us to redeem or retire the notes periodically.

PAYMENT AND CONVERSION

We will make all payments of principal and interest on the notes by dollar check drawn on an account maintained at a bank in The City of New York. If you are the registered holder of notes with a face value greater than \$2,000,000, at your request we will make payments of principal or interest to you by wire transfer to an account maintained by you at a bank in The City of New York and identified by you to the trustee at least 15 days prior to the relevant payment date. Payment of any interest on the notes will be made to the person in whose name the note, or any predecessor note, is registered at the close of business on February 15 or August 15, whether or not a business day, immediately preceding the relevant interest payment date (a "regular record date").

Payments on any global note registered in the name of DTC or its nominee will be payable by the trustee to DTC or its nominee in its capacity as the registered holder under the indenture. Under the terms of the indenture, we and the trustee will treat the persons in whose names the notes, including any global note, are registered as the owners for the purpose of receiving maintaining, supervising or reviewing any of DTC's records or any participant's or indirect participant's records relating to the beneficial ownership interests in the global note; or

- any other matter relating to the actions and practices of DTC or any of its participants or indirect participants.

We will not be required to make any payment on the notes due on any day which is not a business day until the next succeeding business day. The payment made on the next succeeding business day will be treated as though it were paid on the original due date and no interest will accrue on the payment for the additional period of time.

Notes may be surrendered for conversion at the Corporate Trust Office of the trustee in the Borough of Manhattan, New York. Notes surrendered for conversion must be accompanied by appropriate notices and any payments in respect of interest or taxes, as applicable, as described above under "-- Conversion Rights."

We have initially appointed the trustee as paying agent and conversion agent. We may terminate the appointment of any paying agent or conversion agent and appoint additional or other paying agents and conversion agents. However, until the notes have been delivered to the trustee for cancellation, or moneys sufficient to pay the principal of, premium, if any, and interest on the notes have been made available for payment and either paid or returned to us as provided in the indenture, the trustee will maintain an office or agency in the Borough of Manhattan, New York for surrender of notes for conversion. Notice of any termination or appointment and of any change in the office through which any paying agent or conversion agent will act will be given in accordance with "-- Notices" below.

All moneys deposited with the trustee or any paying agent, or then held by us, in trust for the payment of principal of, premium, if any, or interest on any notes which remain unclaimed at the end of two years after the payment has become due and payable will be repaid to us, and you will then look only to us for payment.

REPURCHASE AT OPTION OF HOLDERS UPON A CHANGE IN CONTROL

If a "change in control" as defined below occurs, you will have the right, at your option, to require us to repurchase all of your notes not previously called for redemption, or any portion of the principal amount thereof, that is equal to \$1,000 or an integral multiple of \$1,000. The price we are required to pay is 100% of the principal amount of the notes to be repurchased, together with interest accrued but unpaid to, but excluding, the repurchase date.

At our option, instead of paying the repurchase price in cash, we may pay the repurchase price in our common stock valued at 95% of the average of the closing prices of our common stock for the five trading days immediately preceding and including the third trading day prior to the repurchase date. We may only pay the repurchase price in our common stock if we satisfy conditions provided in the indenture.

Within 30 days after the occurrence of a change in control, we are obligated to give to you notice of the change in control and of the repurchase right arising as a result of the change of control. We must also deliver a copy of this notice to the trustee. To exercise the repurchase right, you must deliver on or before the 30th day after the date of our notice irrevocable written notice to the trustee of your exercise of your repurchase right, together with the notes with respect to which the right is being exercised. We are required to repurchase the notes on the date that is 45 days after the date of our notice.

A change in control will be deemed to have occurred at the time after the notes are originally issued that any of the following occurs:

- any person acquires beneficial ownership, directly or indirectly, through a purchase, merger or other acquisition transaction or series of transactions, of shares of our capital stock entitling the person to exercise 50% or more of the total voting power of all shares of our capital stock that is entitled to vote generally in elections of directors, other than an acquisition by us, any of our subsidiaries or any of our employee benefit plans; or

- we merge or consolidate with or into any other person, any merger of another person into us or we convey, sell, transfer or lease all or substantially all of our assets to another person, other than any transaction:
- that does not result in any reclassification, conversion, exchange or cancellation of outstanding shares of our capital stock; and
- pursuant to which the holders of 50% or more of the total voting power of all shares of our capital stock entitled to vote generally in elections of directors immediately prior to the transaction have the entitlement to exercise, directly or indirectly, 50% or more of the total voting power of all shares of capital stock entitled to vote generally in the election of directors of the continuing or surviving corporation immediately after the transaction; or
- any transaction which is effected solely to change our jurisdiction of incorporation and results in a reclassification, conversion or exchange of outstanding shares of our common stock into solely shares of common stock.

However, a change in control will not be deemed to have occurred if:

- the closing price per share of our common stock for any five trading days within the period of 10 consecutive trading days ending immediately after the later of the change in control or the public announcement of the change in control, in the case of a change in control relating to an acquisition of capital stock, or the period of 10 consecutive trading days ending immediately before the change in control, in the case of change in control relating to a merger, consolidation or asset sale, equals or exceeds 105% of the conversion price of the notes in effect on each of those trading days; or
- all of the consideration, excluding cash payments for fractional shares and cash payments made pursuant to dissenters' appraisal rights, in a merger or consolidation otherwise constituting a change of control under the first and second bullet points in the preceding paragraph above consists of shares of common stock, depository receipts or other certificates representing common equity interests traded on a national securities exchange or quoted on the Nasdaq National Market, or will be so traded or quoted immediately following the merger or consolidation, and as a result of the merger or consolidation the notes become convertible solely into common stock, depository receipts or other certificates representing common equity interests.

For purposes of these provisions:

- the conversion price is equal to \$1,000 divided by the conversion rate;
- whether a person is a "beneficial owner" will be determined in accordance with Rule 13d-3 under the Exchange Act; and
- "person" includes any syndicate or group that would be deemed to be a person under Section 13 (d) (3) of the Exchange Act.

The rules and regulations promulgated under the Exchange Act require the dissemination of prescribed information to security holders in the event of an issuer tender offer and may apply in the event that the repurchase option becomes available to you. We will comply with this rule to the extent it applies at that time.

We may, to the extent permitted by applicable law, at any time purchase notes in the open market, by tender at any price or by private agreement. Any note that we purchase may, to the extent permitted by applicable law and subject to restrictions contained in the purchase agreement with the initial purchaser, be re-issued or resold or may, at our option, be surrendered to the trustee for cancellation. Any notes surrendered for cancellation may not be re-issued or resold and will be canceled promptly.

The definition of change in control includes a phrase relating to the conveyance, transfer, sale, lease or disposition of all or substantially all of our assets. There is no precise, established definition of the phrase "substantially all" under applicable law. Accordingly, your ability to require us to repurchase your notes as a result of conveyance, transfer, sale, lease or other disposition of less than all of our assets may be uncertain.

The foregoing provisions would not necessarily provide you with protection if we are involved in a highly leveraged or other transaction that may adversely affect you.

Our ability to repurchase notes upon the occurrence of a change in control is subject to important limitations. Some of the events constituting a change in control could result in an event of default under our senior debt. Moreover, a change in control could cause an event of default under, or be prohibited or limited by, the terms of our senior debt. As a result, unless we were to obtain a waiver, a repurchase of the notes in cash could be prohibited under the subordination provisions of the indenture until the senior debt is paid in full. Although we have the right to repurchase the notes with our common stock, subject to particular conditions, we cannot assure you that we would have the financial resources, or would be able to arrange financing, to pay the repurchase price in cash for all the notes that might be delivered by holders of notes seeking to exercise the repurchase right. If we were to fail to repurchase the notes when required following a change in control, an event of default under the indenture would occur, whether or not the repurchase is permitted by the subordination provisions of the indenture. Any default may, in turn, cause a default under our senior debt. See "-- Subordination."

MERGERS AND SALES OF ASSETS BY ADVANCED ENERGY

We may not consolidate with or merge into any other entity or convey, transfer, sell or lease our properties and assets substantially as an entirety to any entity other than to one or more of our subsidiaries, and we may not permit any entity to consolidate with or merge into us or convey, transfer, sell or lease the entity's properties and assets substantially as an entirety to us unless:

- the entity formed by the consolidation or into or with which we are merged or the entity to which our properties and assets are so conveyed, transferred, sold or leased, shall be a corporation, limited liability company, partnership or trust organized and existing under the laws of the United States, any State within the United States or the District of Columbia and, if we are not the surviving entity, the surviving entity assumes the payment of the principal of, premium, if any, and interest on the notes and the performance of our other covenants under the indenture; and

- immediately after giving effect to the transaction, no event of default, and no event that, after notice or lapse of time or both, would become an event of default, will have occurred and be continuing.

EVENTS OF DEFAULT

The following are events of default under the indenture:

- we fail to pay principal of or premium, if any, on any note when due, whether or not prohibited by the subordination provisions of the indenture;

- we fail to pay any interest on any note when due, which failure continues for 30 days, whether or not prohibited by the subordination provisions of the indenture;

- we fail to provide notice of a change in control, whether or not the notice is prohibited by the subordination provisions of the indenture;

- we fail to perform any agreement or other covenant in the notes or the indenture, which failure continues for 60 days following notice as provided in the indenture;

- any indebtedness under any bonds, debentures, notes or other evidences of indebtedness for money borrowed, or any guarantee thereof, by us or any of our significant subsidiaries, in an aggregate principal amount in excess of \$15 million is not paid when due either at its stated maturity or upon acceleration thereof, and the indebtedness is not discharged, or the acceleration is not rescinded or annulled, within a period of 30 days after notice as provided in the indenture; and

- particular events of bankruptcy, insolvency or reorganization involving us or any of our significant subsidiaries.

Subject to the provisions of the indenture relating to the duties of the trustee in case an event of default shall occur and be continuing, the trustee will be under no obligation to exercise any of its rights or powers under the indenture at the request or direction of any holder unless the holder shall have offered reasonable indemnity to the trustee. Subject to providing indemnification of the trustee, the holders of a majority in aggregate principal amount of the outstanding notes will have the right to direct the time, method and place of conducting any proceeding for any remedy available to the trustee or exercising any trust or power conferred on the trustee.

If an event of default other than an event of default arising from events of insolvency, bankruptcy or reorganization occurs and is continuing, either the trustee or the holders of at least 25% in principal amount of the outstanding notes may, subject to the subordination provisions of the indenture, accelerate the maturity of all notes. However, after acceleration, but before a judgment or decree based on acceleration, the holders of a majority in aggregate principal amount of outstanding notes may, under specific circumstances, rescind and annul the acceleration if all events of default, other than the non-payment of principal of the notes that have become due solely by declaration of acceleration, have been cured or waived as provided in the indenture. If an event of default arising from events of insolvency, bankruptcy or reorganization occurs, then the principal of, and accrued interest on, all the notes will automatically become immediately due and payable without any declaration or other act on the part of the holders of the notes or the trustee. For information as to waiver of defaults, see "Meetings, Modification and Waiver" below.

You will not have any right to institute any proceeding with respect to the indenture, or for any remedy under the indenture, unless:

- you give the trustee written notice of a continuing event of default;

- the holders of at least 25% in aggregate principal amount of the outstanding notes have made written request and offered reasonable indemnity to the trustee to institute proceedings;

- the trustee has not received from the holders of a majority in aggregate principal amount of the outstanding notes a direction inconsistent with the written request; and

- the trustee shall have failed to institute the proceeding within 60 days of the written request.

However, these limitations do not apply to a suit instituted by you for the enforcement of payment of the principal of, premium, if any, or interest on your note on or after the respective due dates expressed in your note or your right to convert your note in accordance with the indenture.

We will be required to furnish to the trustee annually a statement as to our performance of some of our obligations under the indenture and as to any default in performance.

MEETINGS, MODIFICATION AND WAIVER

The indenture contains provisions for convening meetings of the holders of notes to consider matters affecting their interests.

Particular limited modifications of the indenture may be made without the necessity of obtaining the consent of the holders of the notes.

Other modifications and amendments of the indenture may be made, compliance by us with some restrictive provisions of the indenture may be waived and any past defaults by us under the indenture (except a default in the payment of principal, premium, if any, or interest) may be waived, either:

- with the written consent of the holders of not less than a majority in aggregate principal amount of the notes at the time outstanding; or
- by the adoption of a resolution, at a meeting of holders of the notes at which a quorum is present, by the holders of at least 66 2/3% in aggregate principal amount of the notes represented at the meeting.

The quorum at any meeting called to adopt a resolution will be persons holding or representing a majority in aggregate principal amount of the notes at the time outstanding and, at any reconvened meeting adjourned for lack of a quorum, 25% of the aggregate principal amount.

However, a modification or amendment requires the consent of the holder of each outstanding note affected if it would:

- change the stated maturity of the principal or interest of a note;
- reduce the principal amount of, or any premium or interest on, any note;
- reduce the amount payable upon a redemption or mandatory repurchase;
- modify the provisions with respect to the repurchase rights of holders of notes in a manner adverse to the holders;
- modify our right to redeem the notes in a manner adverse to the holders;
- change the place or currency of payment on a note;
- impair the right to institute suit for the enforcement of any payment on any note;
- modify our obligation to maintain an office or agency in New York City;
- modify the subordination provisions in a manner that is adverse to the holders of the notes;
- adversely affect the right to convert the notes other than a modification or amendment required by the terms of the indenture;
- modify our obligation to deliver information required under Rule 144A to permit resales of the notes and common stock issued upon conversion of the notes if we cease to be subject to the reporting requirements under the Exchange Act;
- reduce the above-stated percentage of the principal amount of the holders whose consent is needed to modify or amend the indenture;
- reduce the percentage of the principal amount of the holders whose consent is needed to waive compliance with some provisions of the indenture or to waive some defaults; or
- reduce the percentage required for the adoption of a resolution or the quorum required at any meeting of holders of notes at which a resolution is adopted.

NOTICES

Notice to holders of the registered notes will be given by mail to the addresses as they appear in the security register. Notices will be deemed to have been given on the date of mailing.

Notice of a redemption of notes will be given to the holders of notes to be redeemed not less than 30 nor more than 60 days prior to the redemption date and will specify the redemption date. A notice of redemption of the notes will be irrevocable. In addition, concurrently with the giving of notice to holders, we will issue a press release containing the same information included in the notices of redemption.

REPLACEMENT OF NOTES

We will replace any note that becomes mutilated, destroyed, stolen or lost at the expense of the holder upon delivery to the trustee of the mutilated notes or evidence of the loss, theft or destruction satisfactory to us and the trustee. In the case of a lost, stolen or destroyed note, indemnity satisfactory to the trustee and us may be required at the expense of the holder of the note before a replacement note will be issued.

PAYMENT OF STAMP AND OTHER TAXES

We will pay all stamp and other duties, if any, that may be imposed by the United States or any political subdivision thereof or taxing authority thereof or therein with respect to the issuance of the notes or of shares of stock upon conversion of the notes. We will not be required to make any payment with respect to any other tax, assessment or governmental charge imposed by any government or any political subdivision thereof or taxing authority thereof or therein.

GOVERNING LAW

The indenture and the notes are governed by and construed in accordance with the laws of the State of New York, United States of America.

THE TRUSTEE

If an event of default occurs and is continuing, the trustee will be required to use the degree of care of a prudent person in the conduct of his own affairs in the exercise of its powers. Subject to these provisions, the trustee will be under no obligation to exercise any of its rights or powers under the indenture at the request of any of the holders of notes, unless they have furnished to the trustee reasonable security or indemnity.

DESCRIPTION OF COMMON STOCK

Our authorized capital stock consists of 55,000,000 shares of common stock, \$0.001 par value, and 1,000,000 shares of preferred stock, \$0.001 par value. As of December 31, 2001, 31,847,735 shares of common stock were outstanding, held by 1,055 holders of record, and no shares of preferred stock were outstanding. In addition, as of December 31, 2001, 2,624,133 shares were available for grant under our 1995 Stock Option Plan, 100,000 shares were available for grant under our 1995 Non-Employee Director Stock Option Plan, 82,320 shares were available for purchase under our Employee Stock Purchase Plan and 539,150 shares were available for grant under our 2001 Stock Option Plan. As of December 31, 2001, options to purchase an aggregate of 2,197,669 shares of common stock were outstanding under these plans.

The holders of common stock are entitled to one vote for each share held of record on all matters submitted to a vote of stockholders. Subject to preferences that may be applicable to any outstanding shares of preferred stock that may be issued, the holders of common stock are entitled to receive ratably any dividends that may be declared from time to time by the board of directors out of funds legally available for the payment of dividends. See "Dividend Policy." The holders of our common stock are entitled to share ratably in all assets remaining after payment of liabilities and liquidation preferences of any outstanding shares of preferred stock in the event of our liquidation, dissolution or winding up. Holders of common stock have no preemptive rights or rights to convert their common stock into any other securities. There are no redemption or sinking fund provisions applicable to the common stock. All outstanding shares of common stock are fully paid and non-assessable.

SECTION 203 OF THE DELAWARE GENERAL CORPORATION LAW

We are subject to Section 203 of the Delaware General Corporation Law ("Section 203"), which, subject to specific exceptions, prohibits a Delaware corporation from engaging in any business combination with any interested stockholder for a period of three years following the time that the stockholder became an interested stockholder, unless: (i) prior to that time, the board of directors of the corporation approved either the business combination or the transaction that resulted in the stockholder becoming an interested holder; (ii) upon consummation of the transaction that resulted in the stockholder becoming an interested stockholder, the interested stockholder owned at least 85% of the voting stock of the corporation outstanding at the time the transaction commenced, excluding for purposes of determining the number of shares outstanding those shares owned (a) by persons who are directors and also officers and (b) by employee stock plans in which employee participants do not have the right to determine confidentially whether shares held subject to the plan will be tendered in a tender or exchange offer; or (iii) at or subsequent to that time, the business combination is approved by the board of directors and authorized at an annual or special meeting of stockholders, and not by written consent, by the affirmative vote of at least 2/3 of the outstanding voting stock which is not owned by the interested stockholder.

Section 203 generally defines a business combination to include: (i) any merger or consolidation involving the corporation and the interested stockholder, (ii) any sale, transfer, pledge or other disposition of 10% or more of the assets of the corporation involving the interested stockholder, (iii) subject to specific exceptions, any transaction that results in the issuance or transfer by the corporation of any stock of the corporation to the interested stockholder, (iv) any transaction involving the corporation that has the effect of increasing the proportionate share of the stock of any class or series of the corporation beneficially owned by the interested stockholder or (v) the receipt by the interested stockholder of the benefit of any loans, advances, guarantees, pledges or other financial benefits provided by or through the corporation. Section 203 generally defines interested stockholder as an entity or person

beneficially owning 15% or more of the outstanding voting stock of the corporation and any entity or person affiliated with or controlling or controlled by the entity or person.

TRANSFER AGENT

The transfer agent and registrar for our common stock is American Stock Transfer.

CERTAIN UNITED STATES FEDERAL INCOME TAX CONSEQUENCES

This section describes the material United States federal income tax consequences of purchasing, owning and disposing of the notes we are offering and the common stock into which the notes may be converted and is the opinion of Sullivan & Cromwell, special tax counsel to Advanced Energy. It applies to you only if you are a United States holder that holds your notes or common stock as capital assets for tax purposes. You are a United States holder if you are a beneficial owner of a note and you are:

- a citizen or resident of the United States,
- a domestic corporation,
- an estate whose income is subject to United States federal income tax regardless of its source, or
- a trust if a United States court can exercise primary supervision over the trust's administration and one or more United States persons are authorized to control all substantial decisions of the trust.

This section does not apply to you if you are a member of a class of holders subject to special rules, such as:

- a dealer in securities or currencies,
- a trader in securities that elects to use a mark-to-market method of accounting for your securities holdings,
- a bank,
- a life insurance company,
- a tax-exempt organization,
- a person that owns notes that are a hedge or that are hedged against interest rate risks,
- a person that owns notes as part of a straddle or conversion transaction for tax purposes, or
- a person whose functional currency for tax purposes is not the U.S. dollar.

This section is based on the Internal Revenue Code of 1986, as amended, its legislative history, existing and proposed regulations under the Internal Revenue Code, published rulings and court decisions, all as currently in effect. These laws are subject to change, possibly on a retroactive basis.

PLEASE CONSULT YOUR OWN TAX ADVISOR CONCERNING THE CONSEQUENCES OF OWNING THESE NOTES IN YOUR PARTICULAR CIRCUMSTANCES UNDER THE CODE AND THE LAWS OF ANY OTHER TAXING JURISDICTION.

PAYMENT OF INTEREST

You will be taxed on any interest on your note as ordinary income at the time you receive the interest or when it accrues, depending on your method of accounting for tax purposes.

NOTES PURCHASED AT A PREMIUM

If you purchase your note for an amount in excess of its principal amount, you may elect to treat the excess as amortizable bond premium. If you make this election, you will reduce the amount required to be included in your income each year with respect to interest on your note by the amount of amortizable bond premium allocable to that year, based on your note's yield to maturity. If you make an election to amortize bond premium, it will apply to all debt instruments, other than debt instruments the interest on which is excludible from gross income, that you hold at the beginning of the first taxable year to which the election applies or that you thereafter acquire, and you may not revoke it without the consent of the Internal Revenue Service.

MARKET DISCOUNT

You will be treated as if you purchased your note at a market discount, and your note will be a market discount note if:

- you purchase your note for less than its stated redemption price at maturity and
- the difference between the note's stated redemption price at maturity and the price you paid for your note is equal to or greater than 1/4 of 1 percent of your note's stated redemption price at maturity multiplied by the number of complete years to the note's maturity.

If your note's stated redemption price at maturity exceeds the price you paid for the note by less than 1/4 of 1 percent multiplied by the number of complete years to the note's maturity, the excess constitutes de minimis market discount, and the rules discussed below are not applicable to you.

You must treat any gain you recognize on the maturity or disposition of your market discount note as ordinary income to the extent of the accrued market discount on your note. Alternatively, you may elect to include market discount in income currently over the life of your note. If you make this election, it will apply to all debt instruments with market discount that you acquire on or after the first day of the first taxable year to which the election applies. You may not revoke this election without the consent of the Internal Revenue Service. If you own a market discount note and do not make this election, you will generally be required to defer deductions for interest on borrowings allocable to your note in an amount not exceeding the accrued market discount on your note until the maturity or disposition of your note.

You will accrue market discount on your market discount note on a straight-line basis unless you elect to accrue market discount using a constant-yield method. If you make this election, it will apply only to the note with respect to which it is made and you may not revoke it.

SALE, EXCHANGE OR REDEMPTION OF THE NOTES

You will generally recognize gain or loss on the sale, redemption or exchange of your note (other than a conversion of your note into common stock) equal to the difference between the amount you realize on the sale or redemption (including the fair market value of any stock "make whole" payment received in connection with the redemption) and your tax basis in your note. Your tax basis in your note will generally be the amount paid for your note, increased by any market discount and de minimis market discount previously included in income with respect to your note, and decreased by any amortizable bond premium applied to reduce interest on your note. This gain or loss will be capital gain or loss when you sell or exchange or we redeem your note, except to the extent attributable to accrued but unpaid interest or market discount. Gain attributable to accrued but unpaid interest or market discount will be taxable as ordinary income. Capital gain of a noncorporate United States holder is generally taxed at a maximum rate of 20% where the property is held more than one year. Your ability to deduct capital losses may be limited.

CONVERSION OF THE NOTES

You generally will not recognize any income, gain or loss upon conversion of a note into shares of our common stock or on receipt of a stock "make whole" payment in connection with a conversion except (i) to the extent such shares are considered attributable to accrued interest or market discount not previously included in income and, thus, are taxable as ordinary income or (ii) with respect to cash received in lieu of a fractional share. Your tax basis in the shares received on conversion of a note will be the same as your adjusted tax basis in the note at the time of the conversion, reduced by any basis allocable to a fractional share interest for which you received cash. The holding period for the shares received on conversion will generally include the holding period of the note converted. However, your tax basis in shares considered attributable to accrued interest or market discount generally will equal the amount of such accrued interest or market discount included in income, and the holding period for such shares will begin on the day after the conversion. Moreover, the tax consequences of receiving a cash "make whole" payment in connection with a provisional redemption are unclear.

Neither the applicable Treasury Regulations nor any case law specifically address the U.S. Federal income tax treatment of a cash "make whole" payment. However, the receipt of this payment should be treated as capital gain because the payment is made on redemption and should not represent a payment made to compensate you for interest accruing up to the sale date. Nevertheless, the Internal Revenue Service could contend that the payment should be treated as additional interest income, the other possible characterization, which will cause it to be taxed to most non-corporate holders at a higher rate if you hold your note for more than one year. Your basis in any shares received in a conversion will not be affected by receipt of a cash "make whole" payment. Your basis in any shares received in connection with any stock "make whole" payment will equal their fair market value on the redemption date.

Cash received in lieu of a fractional share upon conversion will be treated as a payment in exchange for the fractional share. Accordingly, the receipt of cash in lieu of fractional shares generally will result in capital gain or loss (measured by the difference between the cash received for the fractional share and your adjusted tax basis in the fractional share).

DIVIDENDS AND CONSTRUCTIVE DIVIDENDS

If you convert your notes into our common stock, you must include in your gross income the gross amount of any dividend paid by us out of our current or accumulated earnings and profits, as determined for United States federal income tax purposes. Distributions in excess of our current and accumulated earnings and profits will be treated as a return of capital to the extent of your basis in the common stock, and thereafter as capital gain. If you are a corporate U.S. shareholder, you would be able to claim a deduction equal to a portion of any dividends received, subject to generally applicable limitations on that deduction.

You may, in certain circumstances, be deemed to have received a constructive distribution if the conversion price of your notes is adjusted. Adjustments to the conversion price pursuant to a bona fide reasonable adjustment formula which has the effect of preventing the dilution of the interest of the holders of the notes, however, will generally not be considered to result in a constructive distribution of stock. Certain of the possible adjustments provided in your notes, including, without limitation, adjustments made to reflect taxable dividends to our stockholders, will not qualify as being pursuant to a bona fide reasonable adjustment formula. If these adjustments are made, you will be deemed to have received constructive distributions taxable as dividends to the extent of our current and accumulated earnings and profits, even though you have not received any cash or property as a result of these adjustments. In certain circumstances, the failure of the notes to provide for such an adjustment may also result in taxable dividend income to you.

If you convert your notes into our common stock, any distributions of additional shares to you with respect to common stock that are made as part of a pro rata distribution to all of our shareholders generally will not be subject to United States federal income tax.

SALE OF COMMON STOCK

If you sell or otherwise dispose of your common stock, you will recognize capital gain or loss for United States federal income tax purposes equal to the difference between the proceeds you receive and your tax basis in your common stock. Capital gain of a noncorporate United States holder is generally taxed at a maximum rate of 20% where the property is held more than one year, and 18% where the property is held for more than five years. Your ability to deduct capital losses may be limited.

BACKUP WITHHOLDING AND INFORMATION REPORTING

In general, if you are a noncorporate United States holder, we and other payors are required to report to the Internal Revenue Service all payments of principal, any interest or constructive dividends on your note, and any dividends on your common stock. In addition, we and other payors are required to report to the Internal Revenue Service any payment of proceeds of the sale of your note or common stock before maturity within the United States.

Additionally, backup withholding will apply to any interest or dividend payments if you fail to provide an accurate taxpayer identification number, or you are notified by the Internal Revenue Service that you have failed to report all interest and dividends required to be shown on your federal income tax returns.

SELLING SECURITYHOLDERS

The notes were originally issued by us to the initial purchaser in a transaction exempt from the registration requirements of the Securities Act of 1933, and were immediately resold by the initial purchaser to persons reasonably believed by them to be "qualified institutional buyers" as defined by Rule 144A under the Securities Act. The selling securityholders, including their transferees, pledgees or donees or their successors, may from time to time offer and sell pursuant to this prospectus or a supplement hereto any or all of the notes and common stock into which the notes are convertible.

The table below sets forth the name of each selling securityholder, the aggregate principal amount of notes beneficially owned by each selling securityholder that may be offered under this prospectus and the number of shares of common stock into which the notes are convertible. We have prepared the table based on information given to us by or on behalf of the selling securityholders on or prior to April 18, 2002. Unless set forth below, to our knowledge, none of the selling securityholders has, or within the past three years has had, any material relationship with us or any of our predecessors or affiliates or beneficially owns in excess of 1% of our outstanding common stock (the percentage of beneficial ownership is based on Rule 13d-3(d)(i) of the Exchange Act, using 31,847,735 shares of stock outstanding as of December 31, 2001 and, for each holder, treating as outstanding the number of shares of common stock issuable upon conversion of all that holder's notes, but assuming no conversion of any other holder's notes and not including shares of common stock that may be issued by us upon purchase of notes by us at the option of the holder. The selling securityholders may offer all, some or none of the notes or common stock into which the notes are convertible. Because the selling securityholders may offer all or some portion of the notes or the common stock, no estimate can be given as to the amount of the notes or the common stock that will be held by the selling securityholders upon termination of any sales. In addition, the selling securityholders identified below may have sold, transferred or otherwise disposed of all or a portion of their notes since the date on which they provided the information regarding their notes in transactions exempt from the registration requirements of the Securities Act.

Information concerning the selling securityholders may change from time to time and any changed information will be set forth in supplements to this prospectus if and when necessary.

NAME	AGGREGATE PRINCIPAL AMOUNT OF NOTES BENEFICIALLY OWNED AND OFFERED	PERCENTAGE OF NOTES OUTSTANDING	NUMBER OF SHARES OF COMMON STOCK OFFERED (1)
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Bank Austria Cayman Islands, Ltd.....	4,025,000	3.2	134,953
Bankers Trust Company Trustee for Daimler Chrysler Corp. Emp. #1 Pension Plan Dated April 1, 1989(3).....	3,780,000	3.0	126,739
BTPO Growth vs Value.....	2,000,000	1.6	67,057
Clinton Multistrategy Master Fund, Ltd.	1,600,000	1.3	53,646
Clinton Riverside Convertible Portfolio Limited.....	2,400,000	1.9	80,469
Deutsche Banc Alex Brown Inc.(2).....	13,237,000	10.6	443,822
Fidelity Advisor Series VII: Fidelity Advisor Electronics Fund.....	570,000	*	19,111
Fidelity Financial Trust: Fidelity Convertible Securities Fund.....	3,000,000	2.4	100,586
First Union Securities Inc.(2)	7,000,000	5.6	234,702
Franklin and Marshall College.....	215,000	*	7,208
Franklin Investors Series Trust -- Convertible Securities Fund.....	2,000,000	1.6	67,057

NAME	AGGREGATE PRINCIPAL AMOUNT OF NOTES BENEFICIALLY OWNED AND OFFERED	PERCENTAGE OF NOTES OUTSTANDING	NUMBER OF SHARES OF COMMON STOCK OFFERED (1)
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Goldman, Sachs & Co.(2)	4,708,000	3.8	157,854
Highbridge International LLC(3).....	6,500,000	5.2	217,937
JP Morgan Securities Inc.(2)	1,000,000	*	33,528
KBC Financial Products (Cayman Islands)(3).....	2,000,000	1.6	67,057
KBC Financial Products USA Inc.(3)	225,000	*	7,544
Man Convertible Bond Master Fund Ltd.	8,283,000	6.6	277,719
Morgan Stanley & Co.	5,000,000	4	167,644
Onex Industrial Partners Limited.....	1,645,000	1.3	55,155
RAM Trading Ltd.....	6,400,000	5.1	214,584
RCG Halifax.....	350,000	*	11,735
RCG Latitude Master Fund.....	1,795,000	1.4	60,184
RCG Multi Strategy, LP.....	2,030,000	1.6	68,063
Sage Capital.....	4,000,000	3.2	134,115
San Diego County Employees Retirement Association.....	2,000,000	1.6	67,057
SG Cowen Securities Corp.(2).....	4,000,000	3.2	134,115
Silvercreek II Limited.....	980,000	*	32,858
Silvercreek Limited Partnership.....	875,000	*	29,337
State Street Bank Custodian for GE Pension Trust(3).....	1,725,000	1.4	57,837
St. Thomas Trading Ltd.	14,224,000	11.4	476,915
Wachovia Securities International Ltd.(2).....	12,500,000	10	419,111
Zazove Hedged Convertible Fund L.P.....	2,000,000	1.6	67,057
Zazove Income Fund L.P.....	1,800,000	1.4	60,352
Zurich Institutional Benchmarks Master Fund Ltd.....	1,000,000	*	33,528
Other selling securityholders.....	133,000	*	4,459

* Less than one percent.

(1) Assumes conversion of all of the holder's notes at a conversion rate of 33.5289 shares of common stock per \$1,000 principal amount of the notes. This conversion rate is subject to adjustment, however, as described under "Description of Notes -- Conversion Rights". As a result, the number of shares of common stock issuable upon conversion of the notes may increase or decrease in the future. Does not include shares of common stock that may be issued by us upon purchase of notes by us at the option of the holder. In addition, the number of shares of common stock listed for each holder does not include fractional shares. Holders will receive a cash adjustment for any fractional share amount resulting from conversion of the notes, as described under "Description of Notes -- Conversion Rights."

(2) Selling securityholder is a broker-dealer and an underwriter.

(3) Selling securityholder is an affiliate of a broker-dealer, purchased its securities in the ordinary course of business and, at the time of purchase, had no agreements or understandings, directly or indirectly, with any person regarding the distribution of the securities.

PLAN OF DISTRIBUTION

The notes and the common stock into which the notes are convertible are being registered to permit public secondary trading of these securities by the holders thereof from time to time after the date of this prospectus. We will not receive any of the proceeds from the offering of the notes or the common stock by selling securityholders.

The selling securityholders, including their pledgees or donees, may sell the notes and the common stock into which the notes are convertible directly to purchasers or through underwriters, broker-dealers or agents. If the notes or the common stock into which the notes are convertible are sold through underwriters or broker-dealers, the selling securityholder will be responsible for underwriting discounts or commissions or agent's commissions. These discounts, concessions or commissions as to any particular underwriter, broker-dealer or agent may be in excess of those customary in the types of transactions involved.

The notes and the common stock into which the notes are convertible may be sold in one or more transactions at fixed prices, at prevailing market prices at the time of sale, at varying prices determined at the time of sale, or at negotiated prices. Sales may be effected in transactions, which may involve block transactions:

- on any national securities exchange or quotation service on which the notes or the common stock may be listed or quoted at the time of sale;
- in the over-the-counter market;
- in transactions otherwise than on exchanges or services or in the over-the-counter market; or
- through the writing of options.

In connection with sales of the notes and the common stock into which the notes are convertible or otherwise, the selling securityholders may enter into hedging transactions with broker-dealers, which may in turn engage in short sales of the notes and the common stock into which the notes are convertible in the course of hedging the positions they assume. The selling securityholders may also sell short the notes and the common stock into which the notes are convertible and deliver the notes or the common stock into which the notes are convertible to close out short positions, or loan or pledge the notes or the common stock into which the notes are convertible to broker-dealers that in turn may sell the securities.

The aggregate proceeds to the selling securityholders from the sale of the notes or common stock into which the notes are convertible offered by them hereby will be the purchase price of the notes or common stock less discounts and commissions, if any. Each of the selling securityholders reserves the right to accept and, together with their agents from time to time, to reject, in whole or in part, any proposed purchase of notes or common stock to be made directly or through agents. We will not receive any of the proceeds from this offering.

In order to comply with the securities laws of some states, if applicable, the notes and common stock into which the notes are convertible may be sold in these jurisdictions only through registered or licensed brokers or dealers. In addition, in some states the notes and common stock may not be sold unless they have been registered or qualified for sale or an exemption from registration or qualification requirements is available and is complied with.

The selling securityholders and any underwriters, broker-dealers or agents that participate in the sale of the notes and common stock may be "underwriters" within the meaning of Section 2(11) of the Securities Act. Any discounts, commissions, concessions or profit they earn on any resale of the shares may be underwriting discounts and commissions under the Securities Act. Selling securityholders who are "underwriters" within the meaning of Section 2(11) of the Securities Act will be subject to the prospectus delivery requirements of the Securities Act. The

selling securityholders have acknowledged that they understand their obligations to comply with the provisions of the Exchange Act and the rules thereunder relating to stock manipulation, particularly Regulation M.

In addition, any securities covered by this prospectus that qualify for sale pursuant to Rule 144 or Rule 144A of the Securities Act may be sold under Rule 144 or Rule 144A rather than pursuant to this prospectus.

To the extent required, the specific notes or common stock to be sold, the names of the selling securityholders, the respective purchase prices and public offering prices, the names of any agent, dealer or underwriter and any applicable commissions or discounts with respect to a particular offer will be set forth in an accompanying prospectus supplement or, if appropriate, a post-effective amendment to the registration statement of which this prospectus is a part.

We entered into a registration rights agreement for the benefit of the holders of the notes to register their notes and common stock under applicable federal and state securities laws under specific circumstances and at specific times. The registration rights agreement provides for cross-indemnification of the selling securityholders and us and their and our respective directors, officers and controlling persons against specific liabilities in connection with the offer and sale of the notes and the common stock, including liabilities under the Securities Act. We have agreed, among other things, to bear all expenses (other than underwriting discounts and selling commissions) in connection with the registration and sale of the notes and the common stock covered by this prospectus.

VALIDITY OF THE SECURITIES

The validity of the notes and of the common stock offered by this prospectus will be passed upon for Advanced Energy by Sullivan & Cromwell, Palo Alto, California.

EXPERTS

The consolidated financial statements and schedule of Advanced Energy Industries, Inc. as of December 31, 2001 and 2000 and for each of the three years in the period ended December 31, 2001 incorporated by reference in this prospectus and elsewhere in the registration statement have been audited by Arthur Andersen LLP, independent public accountants, as indicated in their reports with respect thereto, and are included herein in reliance upon the authority of said firm as experts in giving said reports.

The financial statements of Aera Japan Limited as of and for the year ended June 30, 2001 incorporated in this prospectus by reference from Advanced Energy Industries, Inc.'s Current Report on Form 8-K/A dated April 2, 2002 have been audited by Deloitte Touche Tohmatsu, independent auditors, as stated in their report, which is incorporated herein by reference, and have been so incorporated in reliance upon the report of such firm given upon their authority as experts in accounting and auditing.

ADDITIONAL INFORMATION

We file annual, quarterly and special reports, proxy statements and other information with the Securities and Exchange Commission, or SEC. You may read and copy any document we file at the SEC's public reference rooms in Washington, D.C. and Chicago, Illinois. Please call the SEC at 1-800-SEC-0330 for further information on the public reference rooms. The SEC's website is located at www.sec.gov and contains reports, proxy and information statements and other information regarding issuers who file electronically. Our website is located at www.aei.com.

In this document, we "incorporate by reference" the information we file with the SEC, which means that we can disclose important information to you by referring to that information. The information incorporated by reference is considered to be part of this prospectus, and later information filed with the SEC will update and supersede this information. We incorporate by reference the documents listed below and any future filings made with the SEC under Section 13(a), 13(c), 14 or 15(d) of the Exchange Act until this offering is completed:

1. Our annual report on Form 10-K for the year ended December 31, 2001;
2. Our current reports on Form 8-K and 8-K/A filed on February 1, 2002 and April 2, 2002, respectively; and
3. Our Form 8-A for registration of our common stock filed on October 12, 1995, as amended.

You may obtain copies of these filings, at no cost, by writing or telephoning us at the following address:

Advanced Energy Industries, Inc. 1625 Sharp Point Drive
Fort Collins, Colorado 80525
Attention: Investor Relations
Telephone: (970) 221-4670

You should rely only on the information provided in this document or incorporated in this document by reference. We have not authorized anyone to provide you with different information. You should not assume that the information in this document, including any information incorporated herein by reference, is accurate as of any date other than that on the front of the document.

PART II

INFORMATION NOT REQUIRED IN PROSPECTUS

ITEM 14. OTHER EXPENSES OF ISSUANCE AND DISTRIBUTION

The following table sets forth all expenses, other than the underwriting discounts and commissions, payable by the Registrant in connection with the sale of the securities being registered. All the amounts shown are estimates except for the registration fee and the filing fee.

Registration fee.....	\$ 31,250
Legal fees and expenses.....	\$210,000
Accounting fees and expenses.....	\$ 50,000
Trustee's fees.....	\$ 16,000
Printer's fees.....	\$ 50,000
Other Expenses.....	\$190,000

TOTAL.....	\$547,250
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ITEM 15. INDEMNIFICATION OF OFFICERS AND DIRECTORS

As permitted by the Delaware General Corporation Law ("DGCL"), Advanced Energy's Restated Certificate of Incorporation, as amended (the "AE Certificate"), provides that no director shall be personally liable to Advanced Energy or any stockholder for monetary damages for breach of fiduciary duty as a director, except for liability: (i) for any breach of the duty of loyalty to Advanced Energy or its stockholders; (ii) for acts or omissions not in good faith or involving intentional misconduct or a knowing violation of the law; (iii) under Section 174 of the DGCL; or (iv) for any transaction from which the director derived an improper personal benefit. While the AE Certificate provides protection from awards for monetary damages for breaches of fiduciary duty, it does not eliminate the director's duty of care. Accordingly, the AE Certificate will not affect the availability of equitable remedies, such as an injunction, based on a director's breach of the duty of care. The provisions of the AE Certificate described above apply to officers of Advanced Energy only if they are directors of Advanced Energy and are acting in their capacity as directors, and does not apply to officers of Advanced Energy who are not directors.

In addition, Advanced Energy's Bylaws provide that Advanced Energy shall indemnify its Executive Officers (as defined in Rule 3b-7 promulgated under the Exchange Act) and directors, and any employee who serves as an Executive Officer or director of any corporation at Advanced Energy's request, to the fullest extent permitted under and in accordance with the DGCL; provided, however, that Advanced Energy may modify the extent of such indemnification by individual contracts with its Executive Officers and directors; and, provided further, that Advanced Energy shall not be required to indemnify any Executive Officer or director in connection with any proceeding (or part thereof) initiated by such person unless: (i) such indemnification is expressly required to be made by law; (ii) the proceeding was authorized by the directors of Advanced Energy; (iii) such indemnification is provided by Advanced Energy, in its sole discretion, pursuant to the powers vested in Advanced Energy under the DGCL; or (iv) such indemnification is required to be made under Article XI, Section 43, Subsection (d) of Advanced Energy's Bylaws. Under the DGCL, directors and officers as well as employees and individuals may be indemnified against expenses (including attorneys' fees), judgments, fines and amounts paid in settlement in connection with specified actions, suits or proceedings, whether civil, criminal, administrative or investigative (other than an action by or in the right of the corporation as a derivative action), if they acted in good faith and in a manner they reasonably believed to be in or not opposed to the best interests of the corporation, and with respect to any criminal action or proceeding, had no reasonable cause to believe their conduct was unlawful. Advanced Energy maintains a policy of directors' and officers' liability insurance that insures Advanced Energy's

directors and officers against the costs of defense, settlement or payment of a judgment under certain circumstances.

ITEM 16. EXHIBITS

EXHIBIT NUMBER -----		DESCRIPTION OF THE DOCUMENT -----
(*)2.1	--	Stock Purchase Agreement, dated November 16, 2001, by and among Advanced Energy Industries, Inc., Advanced Energy Japan K.K., Aera Japan Limited and Certain Stockholders of Aera Japan Limited. The registrant agrees to furnish supplementally a copy of Exhibits A through F-2 and Schedule I through 11.4 to the SEC upon request.
(1)3.1	--	Restated Certificate of Incorporation of Advanced Energy Industries, Inc.
(2)3.2	--	Bylaws of Advanced Energy Industries, Inc.
(3)4.1	--	Registration Rights Agreement, dated as of August 22, 2001, between Advanced Energy Industries, Inc. and Goldman, Sachs & Co.
(4)4.2	--	Indenture, dated as of August 22, 2001, between Advanced Energy Industries, Inc. and State Street Bank and Trust Company of California, N.A., as Trustee
(*)5.1	--	Opinion of Sullivan & Cromwell
8.1	--	Tax Opinion of Sullivan & Cromwell
(*)12.1	--	Computation of Ratio of Earnings to Fixed Charges
23.1	--	Consent of Arthur Andersen LLP, independent public accountants
23.2	--	Consent of Deloitte Touche Tohmatsu
(*)23.3	--	Consent of Sullivan & Cromwell (included in Exhibit 5.1)
23.4	--	Consent of Sullivan & Cromwell (included in Exhibit 8.1)
(*)24.1	--	Power of Attorney
(*)25.1	--	Form T-1 Statement of Eligibility and Qualification of Trustee

(1) Incorporated by reference to the Company's Quarterly Report on Form 10-Q for the quarter ended June 30, 2001 (File No. 000-26966), filed August 13, 2001.

(2) Incorporated by reference to the Company's Registration Statement on Form S-1 (File No. 33-97188), filed September 20, 1995, as amended.

(3) Incorporated by reference to Exhibit 4.2 of the Registrant's current report on Form 8-K filed September 10, 2001.

(4) Incorporated by reference to Exhibit 4.1 of the Registrant's current report on Form 8-K filed September 10, 2001.

(*) Previously filed.

ITEM 17. UNDERTAKINGS

The undersigned registrant hereby undertakes:

(1) To file, during any period in which offers or sales are being made, a post-effective amendment to this registration statement:

(i) To include any prospectus required by Section 10(a)(3) of The Securities Act of 1933;

(ii) To reflect in the prospectus any facts or events arising after the effective date of the registration statement (or the most recent post-effective amendment thereof) which, individually or in the aggregate, represent a fundamental change in the information set forth in the registration statement. Notwithstanding the foregoing, any

increase or decrease in the volume of securities offered (if the total dollar value of securities offered would not exceed that which was registered) and any deviation from the low or high end of the estimated maximum offering range may be reflected in the form of prospectus filed with the Commission pursuant to Rule 424(b) if, in the aggregate, the changes in volume and price represent no more than 20 percent change in the maximum aggregate offering price set forth in the "Calculation of Registration Fee" table in the effective registration statement; and

(iii) To include any material information with respect to the plan of distribution not previously disclosed in the registration statement or any material change to such information in the registration statement;

provided, however, that paragraphs (1)(i) and (1)(ii) do not apply if the information required to be included in a post-effective amendment by those paragraphs is contained in periodic reports filed with or furnished to the Commission by the registrant pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934, or the Exchange Act, that are incorporated by reference in this registration statement.

(2) That, for the purpose of determining any liability under the Securities Act of 1933, each such post-effective amendment shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.

(3) To remove from registration by means of a post-effective amendment any of the securities being registered that remain unsold at the termination of the offering.

(4) That, for purposes of determining any liability under the Securities Act of 1933, each filing of the registrant's annual report pursuant to Section 13(a) or 15(d) of the Securities Exchange Act of 1934 (and, where applicable, each filing of an employee benefit plan's annual report pursuant to Section 15(d) of the Exchange Act) that is incorporated by reference in this registration statement shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.

(5) Insofar as indemnification for liabilities under the Securities Act of 1933 may be permitted to directors, officers and controlling persons of the registrant pursuant to provisions described in Item 15 above, or otherwise, the registrant has been advised that in the opinion of the Securities and Exchange Commission such indemnification is against public policy as expressed in the Securities Act and is, therefore, unenforceable. In the event that a claim for indemnification against such liabilities (other than the payment by the registrant of expenses incurred or paid by a director, officer or controlling person of the registrant in a successful defense of any action, suit or proceeding) is asserted by such director, officer or controlling person in connection with the securities being registered, the registrant will, unless in the opinion of its counsel the matter has been settled by controlling precedent, submit to a court of appropriate jurisdiction the question whether such indemnification by it is against public policy as expressed in the Securities Act and will be governed by the final adjudication of such issue.

SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, the registrant certifies that it has reasonable grounds to believe that it meets all of the requirements for filing on Form S-3 and has duly caused this registration statement to be signed on its behalf by the undersigned, thereunto duly authorized, in Fort Collins, Colorado on April 18, 2002.

ADVANCED ENERGY INDUSTRIES, INC.

BY: /s/ MICHAEL EL-HILLOW

MICHAEL EL-HILLOW
(Senior Vice President and
Chief Financial Officer)

Pursuant to the requirements of the Securities Act of 1933, this registration statement has been signed by the following persons in the capacities and on the dates indicated:

SIGNATURE -----	TITLE -----	DATE ----
* ----- Douglas S. Schatz	Chief Executive Officer President & Chairman of the Board (Principal Executive Officer)	April 18, 2002
/s/ MICHAEL EL-HILLOW ----- Michael El-Hillow	Senior Vice President and Chief Financial Officer (Principal Financial Officer & Principal Accounting Officer)	April 18, 2002
* ----- G. Brent Backman	Director	April 18, 2002
/s/ RICHARD P. BECK ----- Richard P. Beck	Director	April 18, 2002
* ----- Trung Doan	Director	April 18, 2002
* ----- Arthur A. Noeth	Director	April 18, 2002
* ----- Elwood Spedden	Director	April 18, 2002
* ----- Gerald Starek	Director	April 18, 2002
* ----- Arthur W. Zafiropoulo	Director	April 18, 2002
*By: /s/ RICHARD P. BECK ----- As Attorney-in-Fact		

EXHIBIT INDEX

EXHIBIT NUMBER -----	DESCRIPTION OF THE DOCUMENT -----
(*)2.1	-- Stock Purchase Agreement, dated November 16, 2001, by and among Advanced Energy Industries, Inc., Advanced Energy Japan K.K., Aera Japan Limited and Certain Stockholders of Aera Japan Limited. The registrant agrees to furnish supplementally a copy of Exhibits A through F-2 and Schedule I through 11.4 to the SEC upon request.
(1)3.1	-- Restated Certificate of Incorporation of Advanced Energy Industries, Inc.
(2)3.2	-- Bylaws of Advanced Energy Industries, Inc.
(3)4.1	-- Registration Rights Agreement, dated as of August 22, 2001, between Advanced Energy Industries, Inc. and Goldman, Sachs & Co.
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(*) Previously filed.

EXHIBIT 8.1

[LETTERHEAD OF SULLIVAN & CROMWELL]

April 18, 2002

Advanced Energy Industries, Inc.,
1625 Sharp Point Drive,
Fort Collins, Colorado 80525.

Ladies and Gentlemen:

As special tax counsel to Advanced Energy Industries, Inc. (the "Company") in connection with the registration of \$125,000,000 of the Company's 5.00% Convertible Subordinated Notes due September 1, 2006 and Shares of Common Stock Issuable Upon Conversion of the Notes pursuant to the Prospectus which forms a part of the Registration Statement of the Company to which this opinion is filed as an exhibit, we hereby confirm to you that the discussion set forth under the heading "Certain United States Federal Income Tax Consequences" therein is our opinion, subject to the limitations set forth therein.

We hereby consent to the filing of this opinion as an exhibit to the Registration Statement and to the reference to us under the heading "Certain United States Federal Income Tax Consequences" in the Prospectus. In giving such consent, we do not thereby admit that we are in the category of persons whose consent is required under Section 7 of the Securities Act of 1933.

Very truly yours,

/s/ Sullivan & Cromwell

EXHIBIT 23.1

[ANDERSEN LOGO]

CONSENT OF INDEPENDENT PUBLIC ACCOUNTANTS

As independent public accountants, we hereby consent to the incorporation by reference in this Registration Statement on Form S-3 dated April 18, 2002 (Registration Number 333-72748) of our report dated February 28, 2002 included in Advanced Energy Industries, Inc.'s Form 10-K for the year ended December 31, 2001 and to all references to our Firm included in this Registration Statement.

/s/ ARTHUR ANDERSEN LLP

*Denver, Colorado,
April 18, 2002*

EXHIBIT 23.2

INDEPENDENT AUDITORS' CONSENT

We consent to the incorporation by reference in this Amendment No. 5 to Registration Statement No. 333-72748 on Form S-3 of Advanced Energy Industries, Inc. of our report, dated August 24, 2001, except for Notes 9 and 14, as to which the date is March 1, 2002, related to Aera Japan Limited and subsidiaries appearing in the Current Report on Form 8-K/A of Advanced Energy Industries, Inc. filed on April 2, 2002, and to the reference to us under the heading "Experts" in the Prospectus, which is part of such Registration Statement.

DELOITTE TOUCHE TOHMATSU
Tokyo, Japan

April 18, 2002

End of Filing

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