

ADVANCED ENERGY INDUSTRIES INC

Form 10-K

March 02, 2011

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

**FORM 10-K**

- þ ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934.  
For the fiscal year ended December 31, 2010**
- or**
- o TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934.  
For the transition period from \_\_\_\_\_ to \_\_\_\_\_.**

**Commission file number: 000-26966**

**ADVANCED ENERGY INDUSTRIES, INC.  
(Exact name of registrant as specified in its charter)**

**Delaware**  
(State or other jurisdiction of incorporation or organization)  
**1625 Sharp Point Drive, Fort Collins, CO**  
(Address of principal executive offices)

**84-0846841**  
(I.R.S. Employer Identification No.)  
**80525**  
(Zip Code)

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

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

|  |  |
|--|--|
| <b>Title of each class</b>                                       | <b>Name of each exchange on which registered</b> |
| <b>Common Stock, \$0.001 par value</b>                           | <b>NASDAQ Global Select Market</b>               |
| Securities registered pursuant to section 12(g) of the Act: None |  |

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act:  
Yes  No

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Act: Yes  No

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

Indicate by check mark whether the registrant has submitted electronically and posted on its corporate Web site, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files). Yes  No

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

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, or a smaller reporting company. See the definitions of large accelerated filer, accelerated filer and smaller reporting company in Rule 12b-2 of the Exchange Act. (Check one):

|  |   |   |  |
|--|---|---|--|
| Large accelerated filer <input type="checkbox"/> | Accelerated filer <input checked="" type="checkbox"/> | Non-accelerated filer <input type="checkbox"/><br>(Do not check if a smaller reporting company) | Smaller reporting company <input type="checkbox"/> |
|--|---|---|--|

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act). Yes  No

The aggregate market value of voting and non-voting common stock held by non-affiliates of the registrant was \$401,037,485 as of June 30, 2010, based upon the price at which such common stock was last sold on such date. For purposes of this disclosure, shares of common stock held by persons who hold more than 5% of the outstanding common stock and common stock held by executive officers and directors of the registrant have been excluded because such persons are deemed to be affiliates as that term is defined under the rules and regulations promulgated under the Securities Act of 1933. This determination is not necessarily conclusive for other purposes.

43,450,710

(Number of shares of Common Stock outstanding as of March 1, 2011)

## DOCUMENTS INCORPORATED BY REFERENCE

Part III of this Annual Report on Form 10-K incorporates information by reference from the registrant's definitive proxy statement for its 2011 Annual Meeting of Stockholders, scheduled to be held on May 4, 2011. Except as expressly incorporated by reference, the registrant's definitive proxy statement shall not be deemed to be a part of this Annual Report on Form 10-K.

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**PART I**

*Unless the context otherwise requires, as used in this Form 10-K, references to Advanced Energy , the Company , we , us or our refer to Advanced Energy Industries, Inc. and its consolidated subsidiaries.*

**ITEM 1. BUSINESS**

**Overview**

We design, manufacture, sell and support power conversion products that transform power into various usable forms. Our products enable manufacturing processes that use thin-film deposition for various products, such as semiconductor devices, flat panel displays, solar panels and architectural glass. We also supply thermal instrumentation products for advanced temperature control in the thin-film process for these same markets. Our solar inverter products support renewable power generation solutions for residential, commercial and utility-scale solar projects and installations. Our network of global service support centers provides a recurring revenue opportunity as we offer repair services, conversions, upgrades and refurbishments to companies using our products. We also offer a wide variety of operations and maintenance service plans that can be tailored for individual photovoltaic ( PV ) sites of all sizes.

On May 3, 2010, we acquired PV Powered, Inc. ( PV Powered ), a privately-held Oregon corporation based in Bend, Oregon. PV Powered is a leading manufacturer of grid tie PV inverters in the residential, commercial and utility-scale markets. The combined offerings of Advanced Energy and PV Powered provide our customers with solutions in a wider power range and increase the number of solar array opportunities where our products can be utilized.

On October 15, 2010, we sold our gas flow control business, which includes the Aera<sup>®</sup> mass flow control and related product lines, to Hitachi Metals Ltd. Accordingly, the results of operations from our gas flow control business have been excluded from our discussions relating to continuing operations.

On December 22, 2010, we announced that effective January 1, 2011, we will operate as two focused business units, Thin-Film Deposition Power Conversion and Thermal Instrumentation ( Thin Films ) and Renewable Power Inverters ( Renewables ) to enable improved execution and a strategic focus on the distinct markets we serve.

We incorporated in Colorado in 1981 and reincorporated in Delaware in 1995. Our executive offices are located at 1625 Sharp Point Drive, Fort Collins, Colorado 80525, and our telephone number is 970-407-4670.

**Products and Services**

Our products fall primarily into the categories of Thin Films and Renewables. Our products are designed to enable new process technologies, improve productivity and lower the cost of ownership for our customers. We also provide repair and maintenance services for all of our products.

Our products are used in diverse markets, applications and processes, including the manufacture of capital equipment for semiconductor devices, thin-film applications for solar panels and architectural glass and for other thin-film applications including flat panel displays, data storage and industrial coatings as well as the residential, commercial and utility-scale solar inverter markets. These markets can be cyclical in nature. Therefore, demand for our products and our financial results can change as demand for manufacturing equipment, solar inverters and services change in response to consumer demand. Other factors, such as global economic and market conditions and technological

advances in fabrication processes and renewable applications can also have an impact on our financial results, both positively and negatively.

*THIN-FILM DEPOSITION POWER CONVERSION AND THERMAL INSTRUMENTATION*

Our thin-film deposition power conversion systems include direct current ( DC ), pulsed DC mid frequency, and radio frequency ( RF ) power supplies, matching networks and RF instrumentation. These power conversion systems refine, modify and control the raw electrical power from a utility and convert it into

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power that may be customized and is predictable and repeatable. Our power conversion systems are primarily used by semiconductor, solar panel and similar thin-film manufacturers including flat panel display, data storage and architectural glass manufacturers.

Our thermal instrumentation products, used in the semiconductor industry as well as solar panels and LED industries, provide temperature measurement solutions for applications in which time-temperature cycles affect material properties, productivity and yield. These products are used in rapid thermal processing, chemical vapor deposition, and other semiconductor and solar applications requiring non-contact temperature measurement.

### *SOLAR INVERTERS*

Our renewable power inverters offer a transformer-based or transformerless advanced grid-tie PV solution for residential, commercial and utility-scale system installations. Our PV inverters are designed to convert renewable solar power, drawn from large and small scale solar arrays, into high-quality, reliable electrical power. We also offer integrated monitoring and performance measurement to minimize the cost of energy and enhance the value and reliability of PV installations.

### *GLOBAL SUPPORT SERVICES*

Our global support services group offers in-warranty and out-of-warranty repair services in the regions in which we operate, providing us with preventive maintenance opportunities. As semiconductor device manufacturers have become increasingly sensitive to the significant costs of system downtime, they have required that suppliers offer comprehensive local repair service and customer support. To meet these market requirements, we maintain a worldwide support organization in the United States, the People's Republic of China ( PRC ), Japan, Korea, Taiwan, Germany and England.

## **Markets**

Our products compete in markets for high tech manufacturing capital equipment and renewable energy production. The inverter market has lower volume sales during the winter months due to reduced ability to install products. Our other markets are not subject to seasonality; however, these markets are cyclical due to sudden changes in customers manufacturing capacity requirements and spending, which depend in part on capacity utilization, demand for customers' products, inventory levels relative to demand, government incentives and subsidies and access to affordable capital.

### *SEMICONDUCTOR CAPITAL EQUIPMENT*

Customers in the semiconductor capital equipment market incorporate our products into equipment that make integrated circuits. Our power conversion systems provide the energy to enable thin-film processes such as deposition and etch. Our thermal instrumentation products measure the temperature of the process chamber. Precise control over the energy delivered to plasma-based processes enables the production of integrated circuits with reduced feature sizes and increased speed and performance.

### *SOLAR INVERTERS*

We sell residential, commercial and utility-grade solar inverters to distributors, contractors, developers and utility companies who integrate our inverter products into solar array installations. Our solar inverters convert DC power, which is produced by the solar panels in the array, into alternating current ( AC ) power for consumption on-site or to be sold back through the public utility grid. Our commercial and utility-grade inverters have power outputs from 30



kilowatts ( kW ) to 2 megawatts and can be used in small-scale and utility-scale solar array installations. Our residential-grade inverters have power outputs from 1kW to 5 kW and are designed for residential installations.

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### *SOLAR PANEL CAPITAL EQUIPMENT*

We sell our products to OEMs and manufacturers of solar cells who use our products to produce thin-films using silicon substrates as well as glass or metal substrates. The majority of solar cell manufacturing currently uses a silicon wafer as the substrate and employs chemical vapor deposition ( CVD ) thin-film processing. The solar cell industry also has developed processes for manufacturing solar cells on non-silicon substrates, such as glass and metal, using thin-film processes that also employ CVD tools. Our RF and DC power supply products are designed for use in these CVD and physical vapor deposition ( PVD ) tools. Our products are used in leading thin-film solar cell technologies, including amorphous and microcrystalline silicon, copper, indium, gallium, selenide and cadmium telluride.

### *FLAT PANEL DISPLAY CAPITAL EQUIPMENT*

We sell our products to OEMs and manufacturers of flat panel displays, which use thin-film deposition processes similar to those employed in manufacturing semiconductor integrated circuits. Flat panel display technology produces bright, sharp, large, color-rich images on flat screens for products ranging from hand-held devices to laptop and desktop computer monitors, liquid crystal display, light emitting diode ( LED ) backlit and 3-dimensional ( 3D ) television screens. The transition to larger panel sizes and higher display resolution is driving the need for tighter process controls to reduce manufacturing costs and defects.

### *DATA STORAGE CAPITAL EQUIPMENT*

We sell products to OEMs and manufacturers of data storage equipment for use in producing a variety of products, including optical disks, such as CDs, DVDs and Blu-ray; and magnetic storage, such as computer hard discs, including both magnetic media and thin-film heads. These products use a PVD process to produce optical and magnetic thin-film layers as well as a protective-wear layer. In this market, the trend towards higher recording densities requires thinner and more precise films. The use of equipment incorporating optical and magnetic media to store digital data expands with the growth of the laptop, desktop and network server computer markets and the consumer electronics audio, video, gaming, cell phone and entertainment markets.

### *ARCHITECTURAL GLASS CAPITAL EQUIPMENT*

We sell our products to OEMs and to producers of Low Emissivity or Low-E architectural glass. This glass is used in commercial and residential buildings to reflect heat and cold through the use of thin films coated directly on the glass which reduces the energy used in the building. The thin-film deposition process employs PVD tools which use our DC and mid-frequency power products. This market is driven by end market demand for glass related to the residential and commercial construction industry.

### *INDUSTRIAL PRODUCTS CAPITAL EQUIPMENT*

We sell our products to OEMs and to manufacturers who use thin-film deposition processes to produce products for a variety of industrial markets. Thin films are applied to products in plasma-based processes to strengthen and harden surfaces on such diverse products as tools, automotive parts and various other end products. The advanced thin-film production processes allow precise control of various optical and physical properties, including color, transparency and electrical and thermal conductivity. The improved adhesion and high-film quality resulting from plasma-based processing make it the preferred method of applying the thin films.

## **Customers**

Our products are sold worldwide to approximately 400 OEMs and integrators and directly to more than 1,000 end users. Our ten largest customers accounted for approximately 49% of our sales in 2010, 52% of our sales in 2009 and 52% of our sales in 2008. We expect that the sale of products to our largest customers will continue to account for a significant percentage of our sales for the foreseeable future.

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Applied Materials Inc., our largest customer, accounted for 19% of our sales in 2010, 21% of our sales in 2009 and 22% of our sales in 2008. No other customer accounted for greater than 10% of our sales in 2010, 2009 or 2008.

**Backlog**

Our backlog was approximately \$93.1 million at December 31, 2010, a 57.7% increase from \$59.0 million at December 31, 2009. This increase was the result of sharp growth in demand for our products, particularly from the semiconductor capital equipment and solar inverter markets throughout 2010 and the addition of PV Powered to our sales mix. Backlog orders are firm orders scheduled to be filled and shipped in the next 12 months and include our just-in-time supply agreements with major OEM s.

Backlog orders are not necessarily an indicator of future sales levels because of variations in lead times and customer production demand pull systems. Customers may delay delivery of products or cancel orders prior to shipment, subject to possible cancellation penalties. Delays in delivery schedules and/or customer changes to backlog orders during any particular period could cause a decrease in sales and have a material adverse effect on our business and results of operations.

**Marketing, Sales and Distribution**

We sell our products primarily through direct sales personnel to customers in North America, Europe and Asia. Our sales personnel are located in the United States, Canada, the PRC, England, Germany, Japan, South Korea and Taiwan. In addition to our direct sales force, we also have sales representatives and distributors globally that support our selling efforts. We maintain customer service offices at many of the locations listed above, as well as other sites near our customers' locations. We believe that customer service and technical support are important competitive factors and are essential to building and maintaining close, long-term relationships with our customers.

The following table presents our net sales by geographic region for the years ended December 31, 2010, 2009 and 2008. Net sales are attributed to individual countries based on location of our sales office.

| Sales to external customers: | Years Ended December 31, |            |            |
|------------------------------|--------------------------|------------|------------|
|                              | 2010                     | 2009       | 2008       |
|                              | (In thousands)           |            |            |
| United States                | \$ 270,606               | \$ 71,439  | \$ 122,474 |
| People's Republic of China   | 48,024                   | 11,372     | 19,646     |
| Other Asian countries        | 88,872                   | 55,081     | 94,934     |
| Asia                         | 136,896                  | 66,453     | 114,580    |
| Germany                      | 47,339                   | 19,949     | 42,657     |
| Other European Countries     | 4,573                    | 4,005      | 5,455      |
| Europe                       | 51,912                   | 23,954     | 48,112     |
| Total sales                  | \$ 459,414               | \$ 161,846 | \$ 285,166 |

See "Risk Factors" in Item 1A for a discussion of certain risks related to our foreign operations.

**Manufacturing**

Our thin-film deposition manufacturing is performed in Shenzhen, PRC and Seoul, South Korea, and our thermal instrumentation products are manufactured in Vancouver, Washington. Our solar inverters are produced primarily in Fort Collins, Colorado and Bend, Oregon; however, we also have relationships with contract manufacturers in Canada and the PRC for the outsourced production of solar inverters to manage flexible capacity during periods of high demand.

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On October 15, 2010, we sold our gas flow control business to Hitachi Metals Ltd. and exited the gas flow control business. In connection with this transaction, we entered into a Master Services Agreement and a Supplemental Transition Services Agreement pursuant to which we agreed to provide contract manufacturing services of gas flow control products and other transition services for 12 to 18 months.

Manufacturing requires raw materials, including a wide variety of mechanical and electrical components, to be manufactured to our specifications. We use numerous companies, including contract manufacturers, to supply parts for the manufacture and support of our products. Although we make reasonable efforts to assure that parts are available from multiple qualified suppliers, this is not always possible. Accordingly, some key parts may be obtained from a sole supplier or a limited group of suppliers. We seek to reduce costs and to lower the risks of production and service interruptions, as well as shortages of key parts, by:

- (1) selecting and qualifying alternate suppliers for key parts using rigorous technical and commercial evaluation of suppliers products and business processes including testing its components performance, quality and reliability on our power conversion product at our customers and their customers processes. The qualification process follows industry standard practices such as copy exactly used in the Semiconductor industry;
- (2) monitoring the financial condition of key suppliers;
- (3) maintaining appropriate inventories of key parts;
- (4) qualifying new parts on a timely basis; and
- (5) locating certain manufacturing operations in areas that are closer to suppliers and customers.

## **Intellectual Property**

We seek patent protection for inventions governing new products or technologies as part of our ongoing research and development. We currently hold 89 United States patents and 40 foreign-issued patents, and have over 166 patent applications pending in the United States, Europe and Asia. Generally, our efforts to obtain international patents have been concentrated in the industrialized countries within Europe and Asia, because there are other manufacturers and developers of power conversion and control systems in those countries as well as customers for those systems.

During fiscal 2010, we acquired PV Powered and all related intellectual property including 8 United States patents. In addition, PV Powered has 13 patent applications pending in the United States and 9 patent applications in foreign jurisdictions. During 2010, we sold intellectual property related to our gas flow control business to Hitachi Metals Ltd. This included 15 United States patents, 14 patent applications in the United States and 30 patent applications in foreign jurisdictions.

During fiscal 2010, we were granted patents related to the following:

Measurement, control, and protection means for Thin Film power conversion systems, and

Anti-islanding methods, ground fault detection and inverter architectures for solar inverter systems.

As part of our ongoing effort to improve the efficiency within our business, on December 31, 2009, we transferred the economic rights to our patents and know-how between affiliates throughout the world, including the parent company, streamlined our intercompany agreements between company affiliates and restructured our order processing

transaction flow. We subsequently reconfigured our legal entity structure to realign our Chinese manufacturing operations with the intellectual property utilized in such manufacturing. This realignment was accomplished through various license agreements and did not involve any assignment of patents. Accordingly, our patents remain registered in countries with more developed intellectual property laws than those of the PRC. The result of this structure has been to improve efficiency, streamline processes and properly align intellectual property (and the related expenses) with the manufacturing operations undertaken in the PRC. In addition, we believe we will see worldwide tax savings related to the new structure over time.

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Litigation may from time to time be necessary to enforce patents issued to us, to protect trade secrets or know-how owned by us, to defend us against claimed infringement of the rights of others or to determine the scope and validity of the proprietary rights of others. See Risk Factors *We are highly dependent on our intellectual property* in Item 1A.

## **Competition**

The markets we serve are highly competitive and characterized by rapid technological development and changing customer requirements. No single company dominates any of our markets. Significant competitive factors in our markets include product performance, compatibility with adjacent products, price, quality, reliability and level of customer service and support.

We have seen an increase in global competition in the markets in which we compete, especially from Asian and European-based component suppliers. We encounter substantial competition from foreign and domestic companies for each of our product lines. Some of our competitors have greater financial and other resources than us. In some cases, competitors are smaller than we are, but well established in specific product niches. MKS Instruments, Inc., Comdel, Inc., Daihen Corporation, Kyosan Electric Mfg. Co., Ltd., Hüttinger Elektronik GmbH, Comet Holding AG and Entech, Plasmart compete with our power conversion products for thin film processing. SMA Solar Technology AG, SatCon Technology Corporation, Power-One, Inc., Schneider Electric SA and Siemens AG offer products that compete with our solar inverters. Lumasense Technologies, CI Systems, BASF and Laytec GMBH offer products that compete with our thermal products.

A focus on local content is causing new competitors to emerging in Asia with strong support from local governments, industry leaders and investors.

Our ability to continue to compete successfully in these markets depends on our ability to make timely introductions of product enhancements and new products, to localize these development and production activities in key world regions and to produce quality products. We expect our competitors will continue to improve the design and performance of their products and introduce new products with competitive performance characteristics. We believe that we currently compete effectively with respect to these factors, although we cannot assure that we will be able to compete effectively in the future.

## **Research and Development**

The market for our thin film power conversion and thermal measurement products is characterized by ongoing technological changes. We believe that continued and timely development of new highly differentiated products and enhancements to existing products to support OEM requirements is necessary for us to maintain a competitive position in the markets we serve. Accordingly, we continue to devote a significant portion of our personnel and financial resources to research and development projects and seek to maintain close relationships with our customers and other industry leaders in order to remain responsive to their product requirements now and in the future.

Our development focus in renewable equipment continues to address residential, commercial and utility-scale solar projects and installations. Our designs are engineered for reliability, efficiency and levelized cost of energy ( LCOE ) performance in the worldwide markets we serve. We continually invest in research and development projects in order to rapidly deliver better emerging technologies and solutions to the market in support of our customers' demands for maximum performance, reliability and functionality, combined with the lowest LCOE.

Research and development expenses were \$56.6 million in 2010, \$41.1 million in 2009 and \$52.1 million in 2008, representing 12.3% of our sales in 2010, 25.4% of our sales in 2009 and 18.3% of our sales in 2008.



**Employees**

As of December 31, 2010, we had a total of 1,788 employees. There is no union representation of our employees, notwithstanding statutory organization rights applicable to our employees in the PRC, and we have

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never experienced an involuntary work stoppage. We believe that our continued success depends, in part, on our ability to attract and retain qualified personnel. We consider our relations with our employees to be good.

### **Effect of Environmental Laws**

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

Compliance with federal, state and local laws and regulations has not had, and is not expected to have, an adverse effect on our capital expenditures, competitive position, financial condition or results of operations.

### **Website Access**

Our website address is [www.advancedenergy.com](http://www.advancedenergy.com). We make available, free of charge on our website, our Annual Report on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K and all amendments to these reports as soon as reasonably practicable after filing such reports with, or furnishing them to, the Securities and Exchange Commission ( SEC ). Such reports are also available at [www.sec.gov](http://www.sec.gov). Information contained on our website is not incorporated by reference in, or otherwise part of, this Annual Report on Form 10-K or any of our other filings with the SEC.

### **Special Note Regarding Forward-Looking Statements**

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

Some of the forward-looking statements in this Annual Report on Form 10-K are, or reflect, our expectations or projections relating to:

- our future revenues;
- our future sales, including backlog orders;
- our future gross profit;
- reducing our operating breakeven point;
- market acceptance of our products;
- the fair value of our assets and financial instruments;
- research and development expenses;

selling, general and administrative expenses;

sufficiency and availability of capital resources;

capital expenditures;

adequacy of our reserve for excess and obsolete inventory;

adequacy of our warranty reserves;

restructuring activities and expenses;

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general global economic conditions; and

industry trends.

Our actual results could differ materially from those projected or assumed in our forward-looking statements, because forward-looking statements by their nature are subject to risks and uncertainties. Factors that could contribute to these differences or prove our forward-looking statements, by hindsight, to be overly optimistic or unachievable include the factors described in Risk Factors in Item 1A. Other factors might also contribute to the differences between our forward-looking statements and our actual results. We assume no obligation to update any forward-looking statement or the reasons why our actual results might differ.

**Executive Officers of the Registrant**

Our executive officers, their positions and their ages as of December 31, 2010 are as follows:

Dr. Hans-Georg Betz, 64, has been our Chief Executive Officer since August 2005 and has been a member of our Board of Directors since July 2004. Between August 2005 and December 2009, Mr. Betz also served as our President. From August 2001 until he became our Chief Executive Officer and President, Dr. Betz served as chief executive officer of West Steag Partners GmbH, a German-based venture capital company focused on the high-technology industry. In his over 30-year career in the electronics industry, Dr. Betz also has served as chief executive officer of STEAG Electronic Systems AG and a managing director at Leybold AG. Dr. Betz currently serves as a director of Mattson Technology, Inc., a publicly held supplier of advanced process equipment used to manufacture semiconductors, and serves as a member of its compensation committee.

Yuval Wasserman, 56, has been our President and Chief Operating Officer since January 2010. Mr. Wasserman served as Executive Vice President and Chief Operating Officer from April 2009 to January 2010. He joined Advanced Energy in August 2007 as Senior Vice President, Sales, Marketing and Services. In October 2007, he was promoted to executive Vice President, Sales, Marketing and Service. Immediately prior to joining Advanced Energy, from May 2002 to August 2007, Mr. Wasserman served as the president and chief executive officer of Tevet Process Control Technologies, Inc.. Prior to that, he held senior executive and general management positions at Boxer Cross (a metrology company acquired by Applied Materials, Inc.), Fusion Systems (a plasma strip company that is a division of Axcelis Technologies, Inc.), and AG Associates (a semiconductor capital equipment company focused on rapid thermal processing). Mr. Wasserman started his career at National Semiconductor, where he held various process engineering and management positions. Mr. Wasserman joined the board of Synchroness, Inc., an outsourced engineering and product development company, in 2010.

Danny C. Herron, 56, was appointed Executive Vice President and Chief Financial Officer in September 2010. Prior to joining Advanced Energy, he was chief financial officer of Sundrop Fuels, Inc., a solar gasification-based renewable fuels company, from October 2009 through August 2010. From May 2009 through October 2009, Mr. Herron was a consultant at Tatum LLC, a financial consulting business, providing interim chief financial officer and financial consulting services. Mr. Herron served VeraSun Energy Corporation, a corn-based ethanol company, from 2006 through 2008 first as senior vice president and chief financial officer and later as president and chief financial officer. From 2002 through 2006, Mr. Herron was executive vice president and chief financial officer at Swift & Company, a beef and pork producer acquired from ConAgra Foods, Inc. Prior to that, Mr. Herron served as division chief financial officer of ConAgra Foods, Inc. Beef Division.

**ITEM 1A. RISK FACTORS**

An investment in our common stock involves a number of very significant risks. You should carefully consider the risks described below and the other information in this Annual Report before deciding whether to purchase our shares of common stock.

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Our business, financial condition, results of operations and cash flow, could be materially adversely affected by any of these risks. The value of our shares of common stock could decline due to any of these risks, and you may lose all or part of your investment.

This Annual Report also contains forward-looking statements that involve risks and uncertainties. Our actual results could differ materially from those anticipated in these forward-looking statements as a result of certain factors, including the risks faced by us described below.

***Raw material, part, component and subassembly shortages, exacerbated by our dependence on sole and limited source suppliers, could affect our ability to manufacture products and systems and could delay our shipments.***

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

the inability to obtain an adequate supply of required parts, components or subassemblies;

supply shortages, if a sole or limited source provider ceases operations;

the need to fund the operating losses of a sole or limited source provider;

reduced control over pricing and timing of delivery of raw materials and parts, components or subassemblies;

the need to qualify alternative suppliers; and

the inability of our suppliers to develop technologically advanced products to support our growth and development of new products.

Qualifying alternative suppliers could be time consuming and lead to delays in, or prevention of delivery of products to our customers, as well as increased costs. If we are unable to qualify additional suppliers and manage relationships with our existing and future suppliers successfully, if our suppliers experience financial difficulties including bankruptcy or if our suppliers cannot meet our performance or quality specifications or timing requirements, we may experience shortages, delays or increased costs of raw materials, parts, components or subassemblies. This in turn could limit or prevent our ability to manufacture and ship our products, which could materially and adversely affect our relationships with our current and prospective customers and our business, financial condition and results of operations. From time to time, our sole or limited source suppliers have given us notice that they are ending supply of critical parts, components and subassemblies that are required for us to deliver product. In those cases, we have been required to make last time buys of such supplies in advance of product demand from our customers. If we cannot qualify alternative suppliers before these end-of-life supplies are utilized in our products, we may be unable to deliver further product to our customers. To mitigate the risk of not having a supply of critical parts, components and subassemblies for our products, we proactively make additional purchases which we believe addresses such risk.

***Our orders of raw materials, parts, components and subassemblies are based on demand forecasts.***

We place orders with many of our suppliers based on our customers' quarterly forecasts and our annual forecasts. These forecasts are based on our customers' and our expectations as to demand for our products. As the quarter and the year progress, such demand can change rapidly or we may realize that our customers' expectations were overly

optimistic or pessimistic, especially when industry or general economic conditions change. Orders with our suppliers cannot always be amended in response. In addition, in order to assure availability of certain components or to obtain priority pricing, we have entered into contracts with some of our suppliers that require us to purchase a specified amount of components and subassemblies each quarter, even if we are not able to use such components or subassemblies. Moreover, we have obligations to

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some of our customers to hold a minimum amount of finished goods in inventory, in order to fulfill just in time orders, regardless of whether the customers expect to place such orders. We currently have firm purchase commitments and agreements with various suppliers to ensure the availability of components. Our obligation to our suppliers at December 31, 2010 under these purchase commitments and agreements was \$63.5 million. If demand for our products does not continue at current levels, we might not be able to use all of the components that we are required to purchase under these commitments and agreements, and our reserves for excess and obsolete inventory may increase, which could have a material adverse effect on our results of operations. If demand for our products exceeds our customers and our forecasts, we may not be able to timely obtain sufficient raw materials, parts, components or subassemblies, on favorable terms or at all, to fulfill the excess demand.

***We generally have no long-term contracts with our customers requiring them to purchase any specified quantities from us.***

Our sales are primarily made on a purchase order basis, and we generally have no long-term purchase commitments from our customers, which is typical in the industries we serve. As a result, we are limited in our ability to predict the level of future sales or commitments from our current customers, which may diminish our ability to allocate labor, materials and equipment in the manufacturing process effectively. In addition, we may accumulate inventory in anticipation of sales that do not materialize, resulting in excess and obsolete inventory write-offs.

***We are exposed to risks associated with worldwide financial markets and the global economy.***

Our business depends on the expansion of manufacturing capacity in our end markets and the installation base for the products we sell. In the past, severe tightening of credit markets, turmoil in the financial markets and a weakening global economy have contributed to slowdowns in the industries in which we operate. Our markets depend largely on consumer spending. Economic uncertainty exacerbates negative trends in consumer spending and may cause our customers to push out, cancel or refrain from placing equipment orders.

Difficulties in obtaining capital and uncertain market conditions may also lead to a reduction of our sales and greater instances of nonpayment. These conditions may similarly affect our key suppliers, which could affect their ability to deliver parts and result in delays for our products. Further, these conditions and uncertainty about future economic conditions could make it challenging for us to forecast our operating results and evaluate the risks that may affect our business, financial condition and results of operations. As discussed in ***Our orders of raw materials, parts, components and subassemblies are based on demand forecasts***, a significant percentage of our expenses are relatively fixed and based in part on expectations of future net sales. If a sudden decrease in demand for our products from one or more customers were to occur, the inability to adjust spending quickly enough to compensate for any shortfall would magnify the adverse impact of a shortfall in net sales on our results of operations. Conversely, if market conditions were to unexpectedly recover and demand for our products were to increase suddenly, we might not be able to respond quickly enough, which could have a negative impact on our results of operations and customer relations.

***The industries in which we compete are subject to volatile and unpredictable cycles.***

As a supplier to the global semiconductor, flat panel display, solar and related industries, we are subject to business cycles, the timing, length and volatility of which can be difficult to predict. These industries historically have been cyclical due to sudden changes in customers' manufacturing capacity requirements and spending, which depend in part on capacity utilization, demand for customers' products, inventory levels relative to demand and access to affordable capital. These changes have affected the timing and amounts of customers' purchases and investments in technology, and continue to affect our orders, net sales, operating expenses and net income. In addition, we may not be able to respond adequately or quickly to the declines in demand by reducing our costs. We may be required to record



significant reserves for excess and obsolete inventory as demand for our products changes.

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To meet rapidly changing demand in each of the industries we serve, we must effectively manage our resources and production capacity. During periods of decreasing demand for our products, we must be able to appropriately align our cost structure with prevailing market conditions; effectively manage our supply chain; and motivate and retain key employees. During periods of increasing demand, we must have sufficient manufacturing capacity and inventory to meet customer demand; effectively manage our supply chain; and attract, retain and motivate a sufficient number of qualified individuals. If we are not able to timely and appropriately adapt to changes in our business environment or to accurately assess where we are positioned within a business cycle, our business, financial condition or results of operations may be materially and adversely affected.

### ***Cyclical in the semiconductor equipment industry impacts our results of operations.***

Our business is affected by the capital equipment expenditures of semiconductor manufacturers, which in turn is affected by the current and anticipated market demand for integrated circuits and products using integrated circuits. The semiconductor industry is cyclical in nature and has experienced periodic and severe downturns and upturns. Business conditions, therefore, historically have changed rapidly and unpredictably.

Fluctuating levels of investment by semiconductor manufacturers could continue to materially affect our revenues and operating results. Where appropriate, we will attempt to respond to these fluctuations with cost management programs aimed at aligning our expenditures with anticipated revenue streams, which sometimes result in restructuring charges. Even during periods of reduced revenues, we must continue to invest in research and development and maintain extensive ongoing worldwide customer service and support capabilities to remain competitive, which may have a temporary adverse effect on our results of operations. During periods of increased demand, we may have difficulty obtaining sufficient components and subassemblies or increasing production quickly enough to meet our customers requirements.

### ***We are exposed to risks as a result of ongoing changes specific to the solar inverter industry.***

A significant portion of our business is in the emerging solar inverter market, which, in addition to the general industry changes described above in the risk factor ***The industries in which we compete are subject to volatile and unpredictable cycles***, is also characterized by ongoing changes particular to the solar inverter industry. Our business is subject to changes in technology or demand for solar products arising from, among other things, adoption of our inverter products by our customers, compatibility of our solar inverter technology with our customers products or certain solar panel providers, customers and end-users access to affordable financial capital, the cost and performance of solar technology compared to other energy sources, the adequacy of or changes in government energy policies, including the availability and amount of government incentives for solar power, the continuation of renewable portfolio standards and the extent of investment or participation in solar by utilities or other companies that generate, transmit or distribute power to end users. There is also increased market volatility as the size of utility scale solar projects is increasing to hundreds of megawatts of capacity. Such large scale solar projects require significant financial resources on our part should we be selected as the supplier for solar inverters. We are beginning to see requirements in the solar industry for performance guarantees related to solar inverters and associated liquidated damages provisions. This could result in financial exposure for our business if our solar inverters do not meet reliability or uptime requirements. Lastly, customers using our solar inverters are beginning to evaluate multi-year service agreements from us for onsite maintenance and support of our inverters and even the solar site. These agreements, however, are subject to annual renewal and may not be renewed by the customers.

If we do not successfully manage the risks resulting from these ongoing changes occurring in the solar industry, we may miss out on substantial opportunities for revenue and our business, financial condition and results of operations could be materially and adversely affected.



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***Businesses, consumers and utilities might not adopt alternative energy solutions as a means for providing or obtaining their electricity and power needs.***

On-site distributed power generation solutions, such as PV systems, which utilize our inverter products, provide an alternative means for obtaining electricity and are relatively new methods of obtaining electrical power that businesses, consumers and utilities may not adopt at levels sufficient to grow this part of our business. Traditional electricity distribution is based on the regulated industry model whereby businesses and consumers obtain their electricity from a government regulated utility. For alternative methods of distributed power to succeed, businesses, consumers and utilities must adopt new purchasing practices and must be willing to rely upon less traditional means of providing and purchasing electricity. As larger solar projects come online, utilities are becoming increasingly concerned with grid stability, power management and the predictable loading of such power onto the grid.

We cannot be certain that businesses, consumers and utilities will choose to utilize on-site distributed power at levels sufficient to sustain our business in this area. The development of a mass market for our products may be impacted by many factors which are out of our control, including:

market acceptance of PV systems that incorporate our solar inverter products;

the cost competitiveness of these systems;

regulatory requirements; and

the emergence of newer, more competitive technologies and products.

If a mass market fails to develop or develops more slowly than we anticipate, we may be unable to recover the costs we will have incurred to develop these products.

***We might make substantial capital expenditures and commitments to meet anticipated demand for our solar inverters.***

We have invested and will continue to invest significant human and financial resources in the development, marketing and sale of our solar inverters. To increase our manufacturing capacity for our solar inverters in order to meet anticipated demand, we have purchased equipment, leased new facilities and made other capital expenditures and commitments. Commitments for capital expenditures to support our solar inverters totaled \$0.6 million at December 31, 2010. These additional expenditures and commitments have increased, and may continue to increase, our overhead expenses during a time when our operations are not fully absorbing current overhead expenses. The impact could lower gross margins until such time that revenue related to sale of our solar inverters can fully absorb overhead expenses. As mentioned above, we have experienced a shortage of components for our solar inverters that could affect our ability to manufacture products and systems. We and other participants in the industry have seen shortages of insulated gate bipolar transistors, capacitors, switchgear and other discrete electrical components. To mitigate the risk of not having such critical parts, we pro-actively make additional purchases which we believe addresses such risk.

***A significant portion of our sales and accounts receivable are concentrated among a few customers.***

Our ten largest customers accounted for 48.8% of our sales in 2010, 51.6% of our sales in 2009, and 52.1% of our sales in 2008. Applied Materials Inc., our largest customer, accounted for 18.8% of our sales in 2010, 21.4% of our sales in 2009, and 21.8% of our sales in 2008. No other single customer accounted for more than 10% of our sales during 2010, 2009 or 2008. At December 31, 2010 our accounts receivable from ULVAC, Inc. comprised 10.5% of

our total accounts receivable. At December 31, 2009 our accounts receivable from Applied Materials, Inc. represented 15.6% of our total accounts receivable. No other single customer accounted for more than 10% of our accounts receivable as of December 31, 2010 or 2009. If we were to lose any of our significant customers or suffer a material reduction in their purchase orders, revenue could decline and our business, financial condition and results of operations could be materially and adversely affected.

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***Market pressures may reduce or eliminate our profitability.***

Our customers continually exert pressure on us to reduce our prices and extend payment terms. Given the nature of our customer base and the highly competitive markets in which we compete, we may be required to reduce our prices or extend payment terms to remain competitive. We may not be able to reduce our expenses in an amount sufficient to offset potential margin declines. The decrease in cash flow could adversely impact our financial condition.

***If we are unable to adjust our business strategy successfully for some of our product lines to reflect the increasing price sensitivity on the part of our customers, our business and financial condition could be harmed.***

Our business strategy for many of our product lines has been focused on product performance and technology innovation to provide enhanced efficiencies and productivity. As a result of recent economic conditions and changes in various markets that we serve, our customers have experienced significant cost pressures. We have observed increased price sensitivity on the part of our customers. If competition against any of our product lines should come to focus solely on price rather than on product performance and technology innovation, we will need to adjust our business strategy and product offerings accordingly and, if we are unable to do so, our business, financial condition and results of operations could be materially and adversely affected.

***The markets in which we operate are highly competitive.***

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

To remain competitive, we must improve and expand our products and product offerings. In addition, we may need to maintain a high level of investment in research and development and expand our sales and marketing efforts, particularly outside of the United States. We might not be able to make the technological advances and investments necessary to remain competitive. If we were unable to improve and expand our products and product offerings, our business, financial condition and results of operations could be materially and adversely affected.

***Our competitive position could be weakened if we are unable to convince end users to specify that our products be used in the equipment sold by our customers.***

The end users in our markets may direct equipment manufacturers to use a specified supplier's product in their equipment at a particular facility. This occurs with frequency because our products are critical in manufacturing process control for thin-film applications. Our success therefore, depends in part on our ability to have end users specify that our products be used at their facilities. In addition, we may encounter difficulties in changing established relationships of competitors that already have a large installed base of products within such facilities.

***We must achieve design wins to retain our existing customers and to obtain new customers, although design wins achieved do not necessarily result in substantial sales.***

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



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We believe that equipment manufacturers often select their suppliers based on factors including long-term relationships and end user demand. Accordingly, we may have difficulty achieving design wins from equipment manufacturers who are not currently our 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 achieve design wins are time consuming and expensive, and may not be successful. If we are not successful in achieving design wins, or if we do achieve design wins but our customers' systems that utilize our products are not successful, our business, financial condition and results of operations could be materially and adversely impacted.

Once a manufacturer chooses a component for use in a particular product, it is likely to retain that component for the life of that product. Our sales and growth could experience material and prolonged adverse effects if we fail to achieve design wins. However, design wins do not always result in substantial sales, as sales of our products are dependent upon our customers' sales of their products.

### ***Our products may suffer from defects or errors leading to damage or warranty claims.***

Our products use complex system designs and components that may contain errors or defects, particularly when we incorporate new technology into our products or release new versions. If any of our products are defective, we might be required to redesign or recall those products or pay damages or warranty claims and suffer significant harm to our reputation. We accrue a warranty reserve for estimated costs to provide warranty services, including the cost of technical support, product repairs, and product replacement for units that cannot be repaired. Our estimate of costs to fulfill our warranty obligations is based on historical experience and expectation of future conditions. To the extent we experience increased warranty claim activity or increased costs associated with servicing those claims, our warranty accrual will increase, resulting in decreased gross profit.

### ***We conduct manufacturing at only a few sites and our sites are not generally interchangeable.***

Our power products for the semiconductor industry are manufactured in Shenzhen, PRC. Our thermal instrumentation products that are used in the semiconductor industry are manufactured in Vancouver, Washington. Each facility manufactures different products and, therefore, is not interchangeable. Natural or other uncontrollable occurrences at any of our manufacturing facilities could significantly reduce our productivity at such site and could prevent us from meeting our customers' requirements in a timely manner, or at all. Our losses from any such occurrence could significantly affect our operations and results of operations for a prolonged period of time.

Our PV Powered solar inverters are manufactured in Bend, Oregon and we have entered into a contract manufacturing relationship in Canada. Our Solaron inverter products are manufactured at our Fort Collins, Colorado facility and we have entered into contract manufacturing relationships in the PRC and Canada as well. While manufacturing could be shifted to a different manufacturing location for the Solaron and PV Powered inverters if a natural or other uncontrollable occurrence occurred, it may take significant time to transition to another site and delivery times and costs would likely increase preventing us from meeting our customers' requirements in a timely manner, or at all. To the extent that local content requirements exist, we may also be limited in such transitions.

### ***We are subject to risks inherent in international operations.***

Sales to our customers outside the United States were approximately 41.1% of our total sales in 2010, 55.9% in 2009, and 57.1% in 2008. Our success producing goods internationally and competing in international markets is subject to our ability to manage various risks and difficulties, including, but not limited to:

- our ability to effectively manage our employees at remote locations who are operating in different business environments from the United States;



our ability to develop and maintain relationships with suppliers and other local businesses;

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

variations and changes in laws applicable to our operations in different jurisdictions, including enforceability of intellectual property and contract rights;

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

customs regulations and the import and export of goods (including, but not limited to, any United States imposition of antidumping or countervailing duty orders, safeguards, remedies or compensation with respect to our products or subcomponents of our products, particularly those produced in the PRC);

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

our ability to obtain business licenses that may be needed in international locations to support expanded operations;

timely collecting accounts receivable from foreign customers including \$67.7 million in accounts receivable from foreign customers as of December 31, 2010 ; and

changes in tariffs, taxes and foreign currency exchange rates.

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

***Our operations in the People's Republic of China are subject to significant political and economic uncertainties over which we have little or no control and may be unable to alter our business practice in time to avoid reductions in revenues.***

A significant portion of our operations outside the United States are located in the PRC, which exposes us to risks, such as exchange controls and currency restrictions, changes in local economic conditions, changes in PRC laws and regulations, possible expropriation or other PRC government actions, and unsettled political conditions. These factors may have a material adverse effect on our operations, business, results of operations and financial condition.

The PRC's economy differs from the economies of most developed countries in many respects, including with respect to the amount of government involvement, level of development, rate of growth, control of foreign exchange and allocation of resources. While the economy of the PRC has experienced significant growth in the past 20 years, growth has been uneven across different regions and among various economic sectors of the PRC. The PRC government has implemented various measures to encourage economic development and guide the allocation of resources. Some of these measures may benefit the overall economy of the PRC, but may also have a negative effect on us. For example, our financial condition and results of operations may be adversely affected by government control over capital investments or changes in tax regulations that are applicable to us.

***We transitioned a significant amount of our supply base to Asian suppliers.***

We transitioned the purchasing of a substantial portion of components for our thin film products, and continue to consider transitioning additional purchasing related to our solar inverters to Asian suppliers to lower our materials costs and shipping expenses. These components might require us to incur higher than anticipated testing or repairing costs, which would have an adverse effect on our operating results. Customers who have strict and extensive

qualification requirements might not accept our products if these lower-cost components do not meet their requirements. A delay or refusal by our customers to accept such products, as well as an inability of our suppliers to meet our purchasing requirements, might require us to purchase higher-priced components from our existing suppliers or might cause us to lose sales to these customers, either of

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which could lead to decreased revenue and gross margins and have an adverse effect on our results of operations.

***We have entered into contract manufacturing relationships with international suppliers for certain of our inverter products.***

We have entered into contract manufacturing relationships with well-established suppliers in Canada and the PRC for the manufacture of certain of our inverters. These relationships will facilitate our compliance with localization requirements in some world regions where incentives and benefits are granted for local manufacturing. These relationships will also afford us a more flexible manufacturing capacity, thereby enabling us to maintain a competitive advantage in the marketplace for our inverter products. These partners, working closely with us, will in turn be developing a common supply chain for the components that are incorporated into our inverters. While we believe that our contract manufacturers are qualified to manufacture these inverters for us, we may need to address short-term quality and delivery scheduling issues as we develop this new supply chain for these inverters. If we were to encounter significant quality or delivery schedule concerns it might materially and adversely affect our relationships with customers for these inverters and our results of operations. As with many contract manufacturing relationships, costs may be incurred if manufacturing capacity is not fully utilized.

***Changes in tax rules, tax liabilities or utilization of our deferred tax assets could materially affect our results.***

Our future annual and quarterly tax rates could be affected by numerous factors, including changes in the applicable tax laws, composition of earnings in countries with differing tax rates or our valuation and utilization of net deferred tax assets. In the second half of 2009, we reconfigured our legal entity structure to realign our Chinese manufacturing operations with the intellectual property utilized in such manufacturing. On December 31, 2009, we transferred the economic rights to our patents and know-how from other affiliates throughout the world, including the parent company. In general, we are subject to regular examination of our income tax returns by the Internal Revenue Service and other tax authorities. We regularly assess the likelihood of favorable or unfavorable outcomes resulting from these examinations to determine the adequacy of our provision for income taxes. Although we believe our tax estimates and reserves against deferred tax assets and uncertain tax positions are reasonable, including those relied upon in the execution of our entity restructuring, there can be no assurance that any final determination will not be materially different from the treatment reflected in our current or historical income tax provisions and accruals, which could materially and adversely affect our results of operations.

***Feed-in tariff and other subsidy cuts could impact revenue growth in the renewable energy markets.***

Feed-in tariffs have been a significant driver in the growth of the solar industry, with countries throughout the world providing incentives to spur adoption of renewable energy. While many countries are beginning to adopt feed-in tariffs and varying subsidies, others are re-evaluating the level of incentive they wish to provide. Recently, a number of countries have proposed reductions to their feed-in tariffs. As new political parties take office in countries throughout the world, agendas on renewable energy and governments' desire or ability to provide incentives may shift or change. Proposed feed-in tariff reductions in regions in which we do significant business could negatively affect the results of our operations. Such a reduction in the feed-in tariff, including any potential further reductions, could result in a significant decline in demand and price levels for renewable energy products, which could have a material adverse effect on our business, financial condition or results of operations.

***Unfavorable currency exchange rate fluctuations may lead to lower operating margins, or may cause us to raise prices, which could result in reduced sales.***

Currency exchange rate fluctuations could have an adverse effect on our sales and results of operations and we could experience losses with respect to forward exchange contracts into which we may enter. Unfavorable currency

fluctuations could require us to increase prices to foreign customers, which could

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result in lower net sales by us to such customers. Alternatively, if we do not adjust the prices for our products in response to unfavorable currency fluctuations, our results of operations could be materially and adversely affected. In addition, most sales made by our foreign subsidiaries are denominated in the currency of the country in which these products are sold and the currency they receive in payment for such sales could be less valuable at the time of receipt as a result of exchange rate fluctuations. From time to time, we enter into forward exchange contracts and local currency purchased options to reduce currency exposure arising from intercompany sales of inventory. However, we cannot be certain that our efforts will be adequate to protect us against significant currency fluctuations or that such efforts will not expose us to additional exchange rate risks, which could adversely affect our results of operations.

***Changes in the value of the Chinese yuan could impact the cost of our operation in Shenzhen, PRC.***

The PRC government is continually pressured by its trading partners to allow its currency to float in a manner similar to other major currencies. Any change in the value of the Chinese yuan may impact our ability to control the cost of our products in the world market. Specifically, the decision by the PRC government to allow the yuan to begin to float against the United States dollar could significantly increase the labor and other costs incurred in the operation of our Shenzhen facility and the cost of raw materials, parts, components and subassemblies that we source in the PRC, thereby having a material and adverse effect on our financial condition and results of operations.

***We are highly dependent on our intellectual property.***

Our success depends significantly on our proprietary technology. We attempt to protect our intellectual property rights through patents and non-disclosure agreements; however, we might not be able to protect our technology, and competitors might be able to develop similar technology independently. In addition, the laws of some foreign countries might not afford our intellectual property the same protections as do the laws of the United States. Our intellectual property is not protected by patents in several countries in which we do business, and we have limited patent protection in other countries, including the PRC. The cost of applying for patents in foreign countries and translating the applications into foreign languages requires us to select carefully the inventions for which we apply for patent protection and the countries in which we seek such protection. Generally, our efforts to obtain international patents have been concentrated in the European Union and certain industrialized countries in Asia, including Korea, Japan and Taiwan. If we are unable to protect our intellectual property successfully, our business, financial condition and results of operations could be materially and adversely affected.

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

***We have been, and in the future may again be, involved in litigation. Litigation is costly and could result in further restrictions on our ability to conduct business or an inability to prevent others from using technology or make use of market relationships we have developed.***

Litigation may be necessary to enforce our commercial or property rights, to defend ourselves against claimed violations of such rights or to protect our interests in regulatory disputes or similar matters. Litigation often requires substantial management time and attention, as well as financial and other resources, including:

substantial costs in the form of legal fees, fines and royalty payments;

restrictions on our ability to sell certain products or in certain markets;

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

a need to redesign products or seek alternative marketing strategies.

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

***Funds associated with our marketable securities that we have traditionally held as short-term investments may not be liquid or readily available.***

In the past, certain of our investments have been affected by external market conditions that impacted the liquidity of the investment. We do not currently have investments with reduced liquidity, but external market conditions that we cannot anticipate or mitigate may impact the liquidity of our marketable securities. We plan to increase the variety of our investments during 2011. The lack of liquidity associated with these investments may require us to borrow funds at terms that are not favorable or repatriate cash from international locations at a significant cost. We cannot be certain that we will be able to borrow funds or continue to repatriate cash, on favorable terms or at all. If we are unable to do so, our available cash may be reduced until those investments can be liquidated. The lack of available cash may prevent us from taking advantage of business opportunities that arise and may prevent us from executing some of our business plans, either of which could cause our business, financial condition or results of operations to be materially and adversely affected.

***Our intangible assets may become impaired.***

We currently have \$48.4 million of goodwill and \$48.4 million in intangible assets. We periodically review the estimated useful lives of our goodwill and identifiable intangible assets, taking into consideration any events or circumstances that might result in either a diminished fair value or, for intangible assets, a revised useful life. The events and circumstances include significant changes in the business climate, legal factors, operating performance indicators and competition. Any impairment or revised useful life could have a material and adverse effect on our financial position and results of operations, and could harm the trading price of our common stock.

***We are subject to numerous governmental regulations.***

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

we could be subject to fines;

our production or shipments could be suspended; and

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

If we were unable to comply with current or future regulations, directives and standards our business, financial condition and results of operations could be materially and adversely affected.

***Recently enacted financial reform legislation will result in new laws and regulations that may increase our costs of operations.***



On July 21, 2010, the Dodd-Frank Wall Street Reform and Consumer Protection Act (the Dodd-Frank Act ) was enacted. The Dodd-Frank Act requires various federal agencies to adopt a broad range of new implementing rules and regulations, and to prepare numerous studies and reports for Congress. The federal agencies are given significant discretion in drafting the implementing rules and regulations, and consequently, many of the details and much of the impact of the Dodd-Frank Act may not be known for many months or years. The Dodd-Frank Act includes a requirement for disclosure regarding certain minerals necessary to the functionality or production of a product manufactured by reporting companies. Complying

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with this disclosure requirement and other requirements of the Dodd-Frank Act may increase our costs of operations.

***The market price of our common stock has fluctuated and may continue to fluctuate for reasons over which we have no control.***

The stock market has from time to time experienced, and is likely to continue to experience, extreme price and volume fluctuations. Prices of securities of technology companies have been especially volatile and have often fluctuated for reasons that are unrelated to their operating performance. In the past, companies that have experienced volatility in the market price of their stock have been the subject of securities class action litigation. If we were the subject of securities class action litigation, it could result in substantial costs and a diversion of our management's attention and resources.

***Our Chairman of the Board owns a significant percentage of our outstanding common stock, which could enable him to influence our business and affairs, and future sales of our common stock by our Chairman of the Board may negatively affect the market price of our common stock.***

Douglas S. Schatz, our Chairman of the Board, beneficially owned approximately 9.9% of our outstanding common stock as of March 1, 2011. This stockholding gives Mr. Schatz significant voting power and influence. Depending on the number of shares that abstain or otherwise are not voted on a particular matter, Mr. Schatz may be able to influence our business affairs for the foreseeable future in a manner with which our other stockholders may not agree. In addition, the sale of a substantial amount of the shares beneficially owned by him could negatively affect the market price of our common stock.

***The loss of any of our key personnel could significantly harm our results of operations and competitive position.***

Our success depends to a significant degree upon the continuing contributions of our key management, technical, marketing and sales employees. There can be no assurance that we will be successful in retaining our key employees or that we can attract or retain additional skilled personnel as required. Many of the stock options held by our employees have exercise prices that are higher than the current trading price of our common stock, and these underwater options do not serve their purpose as incentives for our employees to remain with the Company. Failure to retain or attract key personnel could significantly harm our results of operations and competitive position.

***Activities necessary to integrate acquisitions may result in costs in excess of current expectations or be less successful than anticipated.***

We recently acquired PV Powered, Inc., and we may acquire other businesses in the future. The success of such transactions will depend on, among other things, our ability to integrate assets and personnel acquired in these transactions and to apply our internal controls process to these acquired businesses. The integration of acquisitions may require significant attention from our management, and the diversion of management's attention and resources could have a material adverse effect on our ability to manage our business. Furthermore, we may not realize the degree or timing of benefits we anticipated when we first enter into the acquisition transaction. If actual integration costs are higher than amounts originally anticipated, if we are unable to integrate the assets and personnel acquired in an acquisition as anticipated, or if we are unable to fully benefit from anticipated synergies, our business, financial condition, results of operations and cash flows could be materially adversely affected.

***The disposition of the Aera<sup>®</sup> mass flow control business and related product lines may impact our ongoing business relationships.***

We recently sold our gas flow control business, which includes our Aera® mass flow control and related product lines and real property in Japan to Hitachi Metals, Ltd. ( Hitachi Metals ). Our business may be impacted by unforeseen difficulties in transitioning the gas flow control business, customers or suppliers to

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Hitachi Metals. As part of the transition of this product line to Hitachi Metals, we have agreed to provide (i) cost-plus contract manufacturing services for a period of twelve months (with a potential one-time extension of six months), (ii) supplemental information technology and customer order processing services for up to six months, and (iii) sales support and materials procurement services (along with access to certain engineering tools) for a period of up to three months. We also are required to work with Hitachi Metals contractors with respect to the creation of an enterprise resource planning system for Hitachi Metals, to manage the acquired product lines. Our provision of these transition services requires diversion of management attention and resources, which could have an adverse effect on our own business and operations.

Further, we continue to sell or seek to sell other products and services to customers who are expected to purchase mass flow control and products from Hitachi Metals. Some of these customers are significant customers of the product lines we retained. If Hitachi Metals is unsuccessful in its integration of the gas flow control business into its business or otherwise is unable to keep our mutual customers satisfied, such customers may reduce or discontinue their purchases of our products as well, which reductions or discontinuations could have a material adverse effect on our business, financial results and operations.

**ITEM 1B. UNRESOLVED STAFF COMMENTS**

None.

**ITEM 2. PROPERTIES**

Information concerning our principal properties at December 31, 2010 is set forth below:

| <b>Location</b>                 | <b>Principal Activity</b>  | <b>Ownership</b> |
|---------------------------------|--|------------------|
| Fort Collins, CO                | Corporate headquarters, research and development, manufacturing, distribution, sales and service | Leased           |
| Austin, TX                      | Distribution and service   | Leased           |
| Bend, OR                        | Research and development, manufacturing, distribution, sales and service                         | Leased           |
| Dallas, TX                      | Distribution and service   | Leased           |
| San Jose, CA                    | Distribution, sales and service  | Leased           |
| Vancouver, WA                   | Research and development, manufacturing, distribution, sales and service                         | Leased           |
| Shanghai, China                 | Distribution and sales   | Leased           |
| Shenzhen, China                 | Manufacturing and distribution   | Leased           |
| Dresden, Germany                | Sales  | Leased           |
| Filderstadt, Germany            | Distribution, sales and service  | Leased           |
| Hwasung Kyunggi-do, South Korea | Distribution, sales and service  | Leased           |
| Sungnam City, South Korea       | Distribution, sales and service  | Owned            |
| Taipei, Taiwan                  | Distribution, sales and service  | Leased           |
| Hachioji, Japan                 |  | Leased           |

|                  |  |        |
|------------------|--|--------|
|                  | Research and development, distribution, sales<br>and service |        |
| Hiroshima, Japan | Service  | Leased |
| Osaka, Japan     | Sales  | Leased |
| Tohuko, Japan    | Sales and service  | Leased |

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We consider the properties that we own or lease as adequate to meet our current and future requirements. We regularly assess the size, capability and location of our global infrastructure and periodically makes adjustments based on these assessments.

**ITEM 3. LEGAL PROCEEDINGS**

We are involved in disputes and legal actions arising in the normal course of our business. While we currently believe that the amount of any ultimate loss would not be material to our financial position, the outcome of these actions is inherently difficult to predict. In the event of an adverse outcome, the ultimate loss could have a material adverse effect on our financial position or reported results of operations. An unfavorable decision in patent litigation also could require material changes in production processes and products or result in our inability to ship products or components found to have violated third-party patent rights. We accrue loss contingencies in connection with our commitments and contingencies, including litigation, when it is probable that a loss has occurred and the amount of the loss can be reasonably estimated.

During 2008, the Customs Office of Taipei, Taiwan issued a series of orders to our Taiwanese subsidiary, Advanced Energy Taiwan, Ltd., requiring that certain of our products manufactured in mainland China and allegedly imported without proper authorization be removed from Taiwan. We protested the orders based upon recent rulings of the Taiwan Bureau of Foreign Trade that the products were authorized for unrestricted import. We originally appealed the withdrawal order to the Taiwan High Administrative Court which ruled against the Company in May 2009. We then appealed that decision to the Taiwan Supreme Administrative Court. We previously recorded a charge of \$0.3 million as our best estimate of the amount likely to be paid to resolve this matter. The case was settled in July 2010 and the charge of \$0.3 million was reversed from cost of sales as of September 30, 2010.

**ITEM 4. REMOVED AND RESERVED****PART II****ITEM 5. MARKET FOR REGISTRANT'S COMMON EQUITY, RELATED STOCKHOLDER MATTERS AND ISSUER PURCHASES OF EQUITY SECURITIES****Principal Market and Price Range of Common Stock**

Our common stock is listed on the NASDAQ Global Select Market under the symbol AEIS. At March 1, 2011, the number of common stockholders of record was 540, and the closing sale price of our common stock on the NASDAQ Global Select Market on that day was \$15.85 per share.

The table below shows the range of high and low closing sale prices for our common stock as quoted (without retail markup or markdown and without commissions) on the NASDAQ Global Select Market:

|                | 2010     |          | 2009     |          |
|----------------|----------|----------|----------|----------|
|                | High     | Low      | High     | Low      |
| First Quarter  | \$ 16.66 | \$ 13.12 | \$ 10.42 | \$ 5.49  |
| Second Quarter | \$ 17.43 | \$ 11.50 | \$ 10.35 | \$ 7.73  |
| Third Quarter  | \$ 18.16 | \$ 11.99 | \$ 14.44 | \$ 9.34  |
| Fourth Quarter | \$ 15.13 | \$ 11.47 | \$ 15.08 | \$ 10.93 |

**Dividend Policy**

We have not declared or paid any cash dividends on our capital stock in our history as a public company. We currently intend to retain all future earnings to finance our business and do not anticipate paying cash or other dividends on our common stock in the foreseeable future.

**Table of Contents****Performance Graph**

The performance graph below shows the five-year cumulative total stockholder return on our common stock during the period from December 31, 2005 through December 31, 2010. This is compared with the cumulative total return of the NASDAQ Composite Index and the Philadelphia Semiconductor Index (PHLX) over the same period. The comparison assumes \$100 was invested on December 31, 2005 in Advanced Energy common stock and in each of the foregoing indices and assumes reinvestment of dividends, if any. Dollar amounts in the graph are rounded to the nearest whole dollar. The performance shown in the graph represents past performance and should not be considered an indication of future performance.

**COMPARISON OF 5 YEAR CUMULATIVE TOTAL RETURN\***  
Among Advanced Energy Industries, Inc., the NASDAQ Composite Index and  
the PHLX Semiconductor Index

\*\$100 invested on 12/31/05 in stock or index, including reinvestment of dividends.  
Indices and our stock performance calculated on a calendar year-end basis.

|   | 12/05            | 12/06            | 12/07            | 12/08           | 12/09            | 12/10            |
|---|------------------|------------------|------------------|-----------------|------------------|------------------|
| <b>Advanced Energy<br/>Industries, Inc.</b> | <b>\$ 100.00</b> | <b>\$ 159.51</b> | <b>\$ 110.57</b> | <b>\$ 84.11</b> | <b>\$ 127.47</b> | <b>\$ 115.30</b> |
| <b>NASDAQ Composite</b>                     | <b>100.00</b>    | <b>111.16</b>    | <b>124.64</b>    | <b>73.80</b>    | <b>107.07</b>    | <b>125.99</b>    |
| <b>PHLX Semiconductor</b>                   | <b>100.00</b>    | <b>94.47</b>     | <b>102.99</b>    | <b>56.15</b>    | <b>91.67</b>     | <b>103.11</b>    |



**Table of Contents****ITEM 6. SELECTED FINANCIAL DATA**

The selected Consolidated Statements of Operations data and the related Consolidated Balance Sheets data were derived from our audited Consolidated Financial Statements. The information below is not necessarily indicative of results of future operations and should be read in conjunction with Item 7, Management's Discussion and Analysis of Financial Condition and Results of Operations of this Form 10-K in order to understand more fully the factors that may affect the comparability of the information presented below:

|   | <b>2010</b>                                  | <b>Years Ended December 31,</b> |             |             | <b>2006</b> |
|---|--|---------------------------------|-------------|-------------|-------------|
|   |  | <b>2009</b>                     | <b>2008</b> | <b>2007</b> |             |
|   | <b>(In thousands, except per share data)</b> |                                 |             |             |             |
| <b>Consolidated Statements of Operations Data:</b>              |  |                                 |             |             |             |
| Sales   | \$ 459,414                                   | \$ 161,846                      | \$ 285,166  | \$ 330,686  | \$ 353,370  |
| Operating income (loss)   | 65,188                                       | (97,140)                        | 5,255       | 29,645      | 53,678      |
| Income (loss) from continuing operations before income taxes    | 67,409                                       | (95,230)                        | 8,138       | 34,455      | 58,355      |
| Income (loss) from continuing operations, net of income taxes   | 53,593                                       | (101,812)                       | (6,501)     | 24,584      | 78,957      |
| Income (loss) from discontinued operations, net of income taxes | 17,599                                       | (893)                           | 4,722       | 9,777       | 9,365       |
| Net income (loss)   | 71,192                                       | (102,705)                       | (1,779)     | 34,361      | 88,322      |
| <b>Earnings per Share:</b>                                      |  |                                 |             |             |             |
| <b>Continuing Operations:</b>                                   |  |                                 |             |             |             |
| Basic earnings (loss) per share                                 | \$ 1.25                                      | \$ (2.43)                       | \$ (0.15)   | \$ 0.54     | \$ 1.77     |
| Diluted earnings (loss) per share                               | \$ 1.23                                      | \$ (2.43)                       | \$ (0.15)   | \$ 0.54     | \$ 1.74     |
| <b>Discontinued Operations:</b>                                 |  |                                 |             |             |             |
| Basic earnings (loss) per share                                 | \$ 0.41                                      | \$ (0.02)                       | \$ 0.11     | \$ 0.22     | \$ 0.21     |
| Diluted earnings (loss) per share                               | \$ 0.41                                      | \$ (0.02)                       | \$ 0.11     | \$ 0.21     | \$ 0.21     |
| <b>Net Income (Loss):</b>                                       |  |                                 |             |             |             |
| Basic earnings (loss) per share                                 | \$ 1.66                                      | \$ (2.45)                       | \$ (0.04)   | \$ 0.76     | \$ 1.97     |
| Diluted earnings (loss) per share                               | \$ 1.64                                      | \$ (2.45)                       | \$ (0.04)   | \$ 0.75     | \$ 1.95     |
| Basic weighted-average common shares outstanding                | 42,862                                       | 41,966                          | 42,537      | 45,156      | 44,721      |
| Diluted weighted-average common shares outstanding              | 43,419                                       | 41,966                          | 42,537      | 45,704      | 45,265      |
| <b>Consolidated Balance Sheets Data:</b>                        |  |                                 |             |             |             |
| Total assets  | \$ 505,157                                   | \$ 345,125                      | \$ 420,637  | \$ 459,028  | \$ 411,903  |
| Total long-term debt and lease obligations                      | 191  | 76                              | 164         | 243         | 329         |

## **ITEM 7. MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS**

Certain statements set forth below under this caption constitute forward-looking statements. See *Business Special Note Regarding Forward-Looking Statements* in Item 1 of this Annual Report on Form 10-K for additional factors relating to such statements, and see *Risk Factors* in Item 1A for a discussion of certain risks applicable to our business, financial condition and results of operations.

### **Business Overview and Presentation**

2010 was a year of significant strategic and financial accomplishments for Advanced Energy. Having emerged from one of the most severe declines the capital equipment industry has ever experienced, fiscal 2009 was characterized by credit constraints in the financial markets and a weak global economy that negatively impacted all of the markets we serve. 2010 saw an equally unparalleled rebound. Advanced Energy demonstrated speed and flexibility in responding to the changing market conditions and needs of its customers, generating nearly \$460 million in total revenue and \$1.23 in diluted earnings per share.

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### *Business acquisition and disposition*

Of the many milestones we achieved in 2010, the most noteworthy came in the form of strategic endeavors. First, we expanded our solar inverter business with the acquisition of PV Powered in May 2010, a privately-held Oregon corporation based in Bend, Oregon. PV Powered is a leading manufacturer of grid tie PV inverters in the residential, commercial and utility-scale markets. The distinctive combination of PV's exceptional line of products with our high-powered Solarons has afforded us a position among the leaders in one of the fastest-growing markets for inverters, the North American solar inverter market.

We further focused these efforts by divesting our gas flow control business in October 2010, which included our Aera® mass flow control and related product lines, to Hitachi Metals, Ltd.

Additional information on the sales price, payment terms and other financial data should be read in conjunction with our Consolidated Financial Statements, including the notes thereto, in Item 8 of this Annual Report on Form 10-K.

## **CRITICAL ACCOUNTING ESTIMATES**

The preparation of consolidated financial statements and related disclosures in conformity with accounting principles generally accepted in the United States of America ( U.S. GAAP ) requires management to make judgments, assumptions and estimates that affect the amounts reported. Note 1 *Operations and Summary of Significant Accounting Policies and Estimates* to our Consolidated Financial Statements describes the significant accounting policies used in the preparation of our Consolidated Financial Statements. The accounting positions described below are significantly affected by critical accounting estimates. Such accounting positions require significant judgments, assumptions, and estimates to be used in the preparation of the Consolidated Financial Statements, actual results could differ materially from the amounts reported based on variability in factors affecting these statements.

### ***Revenue Recognition***

We recognize revenue from product sales upon transfer of title and risk of loss to our customers provided that there is evidence of an arrangement, the sales price is fixed or determinable and the collection of the related receivable is reasonably assured. In most transactions, we have no obligations to our customers after the date products are shipped other than pursuant to warranty obligations. For customers purchasing our Renewables products, we provide installation, support and services after the product has been shipped. We defer the fair value of any undelivered elements until the undelivered element is delivered. Fair value is the price charged when the element is sold separately. Shipping and handling fees billed to customers, if any, are recognized as revenue. The related shipping and handling costs are recognized in cost of sales.

We maintain a credit approval process and we make significant judgments in connection with assessing our customers ability to pay at the time of shipment. The customers purchasing our Renewables products require larger credit limits than those purchasing our Thin Film products. Despite this assessment, from time to time, our customers are unable to meet their payment obligations. We continuously monitor our customers' credit worthiness, and use our judgment in establishing a provision for estimated credit losses based upon our historical experience and any specific customer collection issues that we have identified. While such credit losses have historically been within our expectations and the provisions established, there is no assurance that we will continue to experience the same credit loss rates that we have in the past. A significant change in the liquidity or financial position of our customers could have a material adverse impact on the collectability of accounts receivable and our future operating results.

### ***Inventory***

We value our inventory at the lower of cost (first-in, first-out method) or market. We regularly review inventory quantities on hand and record a provision to write-down excess and obsolete inventory to its estimated net realizable value, if less than cost, based primarily on our estimated forecast of product demand. Demand for our products can fluctuate significantly. Our industry is subject to technological change, new

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product development and product technological obsolescence that could result in an increase in the amount of obsolete inventory quantities on hand. Therefore, any significant unanticipated changes in demand or technological developments could have a significant impact on the value of our inventory and our reported operating results.

### ***Warranty Costs***

We provide for the estimated costs to fulfill customer warranty obligations upon the recognition of the related revenue. We offer warranty coverage for a majority of our thin-film products for periods typically ranging from 12 to 24 months after shipment. We warrant our solar inverter products for five to ten years. We estimate the anticipated costs of repairing our products under such warranties based on the historical costs of the repairs and any known specific product issues. The assumptions we use to estimate warranty accruals are reevaluated periodically in light of actual experience and, when appropriate, the accruals are adjusted. Should product failure rates differ from our estimates, actual costs could vary significantly from our expectations.

### ***Intangible Assets, Goodwill and Other Long-Lived Assets***

We completed our acquisition of PV Powered in May 2010 for a total cost of \$90.3 million. In addition, we sold our gas flow control business for approximately \$43.3 million. As a result of our acquisition, we recorded intangible assets and goodwill. Goodwill is subject to annual impairment testing as well as testing upon the occurrence of any event that indicates a potential impairment. Intangible assets and other long-lived assets are subject to an impairment test if there is an indicator of impairment. The carrying value and ultimate realization of these assets is dependent upon our estimates of future earnings and benefits that we expect to generate from their use. If our expectations of future results and cash flows are significantly diminished, intangible assets, long-lived assets and goodwill may be impaired and the resulting charge to operations may be material. When we determine that the carrying value of intangibles or other long-lived assets may not be recoverable based upon the existence of one or more indicators of impairment, we use the projected undiscounted cash flow method to determine whether an impairment exists, and then measure the impairment using discounted cash flows and other fair value measurements. To measure impairment for goodwill, we compare the fair value of our reporting units by measuring discounted cash flows to the book value of the reporting units. Goodwill would be impaired if the resulting implied fair value of goodwill was less than the recorded book value of the goodwill.

The estimation of useful lives and expected cash flows require us to make significant judgments regarding future periods that are subject to some factors outside of our control. Changes in these estimates can result in significant revisions to our carrying value of these assets and may result in material charges to our results of operations.

### ***Income Taxes***

We assess the recoverability of our net deferred tax assets and the need for a valuation allowance on a quarterly basis. Our assessment includes a number of factors, including historical results and taxable income projections for each jurisdiction. The ultimate realization of deferred income tax assets is dependent on the generation of taxable income in appropriate jurisdictions during the periods in which those temporary differences are deductible. We consider our scheduled reversal of deferred income tax liabilities, projected future taxable income, and tax planning strategies in determining the amount of our valuation allowance.

Accounting for income taxes requires a two-step approach to recognize and measure uncertain tax positions. The first step is to evaluate our tax position by determining if, based on the technical merits, it is more likely than not that our position will be sustained upon audit, including resolutions of related appeals or litigation processes, if any. The second step is to measure the tax benefit as the largest amount that is more than 50% likely of being realized upon ultimate settlement. We regularly assess the likelihood of favorable or unfavorable outcomes resulting from these

examinations to determine the adequacy of our provision for income taxes. This evaluation is based on factors including, but not limited to, changes in facts or circumstances, changes in tax law, effectively settled issues under audit and new audit activity.

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Although we believe our tax estimates and reserves, including those for uncertain tax positions, are reasonable, including those relied upon in the execution of our entity restructuring, there can be no assurance that any final determination will not be materially different from the treatment reflected in our current or historical income tax provisions and accruals, which could materially and adversely affect our results of operations.

## **Business Environment and Trends**

### *SEMICONDUCTORS*

The industry has witnessed some underlying changes as we exited 2010. The increase of capital investment that occurred throughout the year slowed to some extent in the fourth quarter, particularly in the area of 300mm semiconductor tools wafer production. Suppliers across the industry were negatively impacted as the current round of investment ended for several large manufacturers. We anticipate the resumption of capital investment over the course of the year or potentially sooner, given that a number of manufacturers have announced plans for new rounds of capital expenditure primarily for 300mm wafer production. Additionally, we believe a fundamental shift is occurring as the industry moves from dynamic random access memory ( DRAM ) to NAND flash memory for use in tablet PCs such as iPads. There has also been growth in solid state drives. DRAM has been the predominant driver of the semiconductor industry over the last six quarters, but as the industry moves towards NAND flash memory, we expect an impact in a number of companies and regions such as Korea. The increased focus on NAND flash memory may result in market share shifts, towards those strong in NAND and Etch tool technology. We also believe some manufacturers are re-purposing fabrication lines in order to enter the foundry business and will require additional investment.

Another 2010 industry driver was the re-tooling of 200mm wafer fabs, which led to significant growth in sales of used tools and legacy products for OEMs. This shift to older products was driven by demand for electronic components that do not required 300mm, such as analog circuits for power electronics in automobiles. More recently however, 300mm tools are again being shipped as fabs prepare for the next technological shift and further capacity increases.

### *FLAT PANEL DISPLAY*

We have seen several quarters of increasing revenue and capital investment largely centered around higher generation LCD panels (Generation 8 and above). Looking ahead, there are a variety of non-traditional market factors that may stimulate the next round of capital investment by equipment manufacturers, such as more complex technologies and smaller panels for tablet PCs, as well as proximity touch screens and LED back-lighting.

We anticipate capacity additions for LCD and more technology advancements around organic light emitting diodes ( OLEDs ), especially in Korea. While the exact timeline of investment cycles can be challenging to pinpoint in this market, we believe they will occur in the next 12 to 18 months. We are working diligently to position ourselves with the right customers, such as those in Korea, and the right products in order to capitalize on these trends and drive sales. While this continues to be a somewhat unpredictable market, we expect to see an increase in sales during the second half of the year, specifically in Etch tools.

### *THIN FILM RENEWABLES*

Throughout 2010, we saw strong demand for our crystalline silicon PV products in both Europe and the PRC. We anticipate investment and demand for these products to remain stable for most of 2011. There have been indications of a slowdown in the European market as governments in many European countries have reduced available incentives and feed-in-tariffs, but the Chinese market is expected to grow due to the Chinese government's investment in solar panel manufacturing capacity. The North American market grew in 2010 as larger megawatt output solar array

projects resulted in an increase in the demand for solar panels. We anticipate that consumption of inventory will slow demand slightly in early 2011, but capacity for panel manufacturing remains high and we believe this will drive sales higher in the second half of the year.



**Table of Contents***INVERTER*

We experienced exponential growth in the inverter market in 2010. Along with the global expansion of our Solaron inverter product into Europe, this increase was also driven by our acquisition of PV Powered. The majority of our sales in the inverter market continue to come from commercial and utility-scale applications, particularly for large central inverters over 250kW and our 1-2 MW integrated power sub-station solutions. Market demand in Europe may slow in 2011 because of changes to and/or reductions in feed-in-tariff incentives in certain countries, but we anticipate growth in demand in North America due to lucrative government incentives in Canada as well as planned investment by utilities in the United States. As a result of the above factors and full year of inverter revenue associated with the acquisition of PV Powered, sales in this market will increase in 2011 as compared to 2010.

**Results of Operations**

Our analysis presented below is organized to provide the information we believe will be instructive for understanding our historical performance and relevant trends going forward. Our results of operations include the operating results of PV Powered for the period May 3, 2010 through December 31, 2010. Operating results applicable to our gas flow control business are excluded from our results of continuing operations for all periods presented. This discussion should be read in conjunction with our Consolidated Financial Statements, including the notes thereto, in Item 8 of this Annual Report on Form 10-K.

The following table sets forth, for the periods indicated, certain data derived from our Consolidated Statements of Operations:

|  | <b>Years Ended December 31,</b> |              |             |
|--|---------------------------------|--------------|-------------|
|  | <b>2010</b>                     | <b>2009</b>  | <b>2008</b> |
|  | <b>(In thousands)</b>           |              |             |
| Sales  | \$ 459,414                      | \$ 161,846   | \$ 285,166  |
| Gross profit   | 199,199                         | 49,790       | 109,570     |
| Operating expenses   | 134,011                         | 146,930      | 104,315     |
| Operating income (loss)                                      | 65,188                          | (97,140)     | 5,255       |
| Other income, net  | 2,221                           | 1,910        | 2,883       |
| Income (loss) from continuing operations before income taxes | 67,409                          | (95,230)     | 8,138       |
| Provision for income taxes                                   | 13,816                          | 6,582        | 14,639      |
| Net income (loss) from continuing operations                 | \$ 53,593                       | \$ (101,812) | \$ (6,501)  |

The following table sets forth, for the periods indicated, the percentage of sales represented by certain items reflected in our Consolidated Statements of Operations:

|  | <b>Years Ended December 31,</b> |             |             |
|--|---------------------------------|-------------|-------------|
|  | <b>2010</b>                     | <b>2009</b> | <b>2008</b> |

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|  |        |         |        |
|--|--------|---------|--------|
| Sales  | 100.0% | 100.0%  | 100.0% |
| Gross profit   | 43.4%  | 30.8%   | 38.4%  |
| Operating expenses   | 29.2%  | 90.8%   | 36.6%  |
| Operating income (loss)                                      | 14.2%  | (60.0%) | 1.8%   |
| Other income, net  | 0.5%   | 1.2%    | 1.0%   |
| Income (loss) from continuing operations before income taxes | 14.7%  | (58.8%) | 2.8%   |
| Provision for income taxes                                   | 3.0%   | 4.1%    | 5.1%   |
| Net income (loss) from continuing operations                 | 11.7%  | (62.9%) | (2.3%) |

**Table of Contents***SALES*

The following tables summarize annual net sales, and percentages of net sales, by product type for each of the years ended 2010, 2009, and 2008:

|  | Years Ended December 31, |            |            | Increase/ (Decrease) |              | Percent Change  |                 |
|--|--------------------------|------------|------------|----------------------|--------------|-----------------|-----------------|
|  | 2010                     | 2009       | 2008       | 2010 v.<br>2009      | 2009 v. 2008 | 2010 v.<br>2009 | 2009 v.<br>2008 |
|  | (In thousands)           |            |            |                      |              |                 |                 |
| Semiconductor capital equipment market | \$ 174,404               | \$ 62,991  | \$ 110,724 | \$ 111,413           | \$ (47,733)  | 176.9%          | (43.1%)         |
| Non-semiconductor capital equipment    | 236,856                  | 61,725     | 117,760    | 175,131              | (56,035)     | 283.7%          | (47.6%)         |
| Total product                          | 411,260                  | 124,716    | 228,484    | 286,544              | (103,768)    | 229.8%          | (45.4%)         |
| Global support                         | 48,154                   | 37,130     | 56,682     | 11,024               | (19,552)     | 29.7%           | (34.5%)         |
| Total sales                            | \$ 459,414               | \$ 161,846 | \$ 285,166 | \$ 297,568           | \$ (123,320) | 183.9%          | (43.2%)         |

|  | Years Ended December 31, |        |        |
|--|--------------------------|--------|--------|
|  | 2010                     | 2009   | 2008   |
| Semiconductor capital equipment market | 38.0%                    | 38.9%  | 38.8%  |
| Non-semiconductor capital equipment    | 51.5%                    | 38.2%  | 41.3%  |
| Total product                          | 89.5%                    | 77.1%  | 80.1%  |
| Global support                         | 10.5%                    | 22.9%  | 19.9%  |
| Total sales                            | 100.0%                   | 100.0% | 100.0% |

*Total Sales*

Total sales for the twelve months ended December 31, 2010 increased 183.9% to \$459.4 million from \$161.8 million for the twelve months ended December 31, 2009. The increase in sales was driven by a recovery in all of the end markets that we serve along with the continued expansion of our global footprint, particularly in Europe, for sales of our Solaron inverter. Our acquisition of PV Powered on May 3, 2010 added an additional \$65.7 million in sales from May 3, 2010 to December 31, 2010.

Total sales decreased 43.2% to \$161.8 million in 2009 as compared to 2008. This reflected significantly reduced demand in 2009 for manufacturing equipment and services due to extremely unfavorable global economic and industry conditions. The global negative trends in customer spending and the pervasive economic uncertainty made many of our customers significantly reduce their factory operations and cut back their capital spending plans for capacity expansion. This severely impacted the demand for our products for 2009. The market has recovered

significantly in 2010.

*Semiconductor Market Sales*

In 2010, semiconductor market sales rose 176.9% to \$174.4 million, or 38.0% of sales, from \$63.0 million, or 38.9% of sales in 2009. We believe that demand in the semiconductor capital equipment market continued to grow throughout 2010 as technology investments at foundries drove a rebuilding of inventory to satisfy the consumer electronics market. In the near term, we expect that a transition from dynamic random access memory to flash memory will result in continued investment in new products and capacity in the semiconductor capital equipment industry. We expect our 2011 sales in this market to be similar to that of 2010.

Sales to the semiconductor capital equipment market decreased 43.1% in 2009 as compared to 2008 as end market demand for products that included semiconductors fell in the wake of the global economic crisis. The drop in demand reduced factory use and significantly reduced the need for semiconductor fabrication expansion. The semiconductor capital equipment market was severely affected by these developments and demand for our products in these markets decreased from previous levels.

*Non-semiconductor Market Sales*

Total sales to the non-semiconductor capital equipment markets increased 283.7% to \$236.9 million, or 51.5% of sales, in 2010 compared to \$61.7 million, or 38.2% of sales, in 2009. The markets that comprise

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our non-semiconductor capital equipment markets include flat panel display, solar panel, data storage, architectural glass and other industrial thin-film manufacturing equipment markets and our solar inverter market. With the exception of the solar inverter market, our customers in these markets are predominantly large OEMs for new equipment. Our customers in the solar inverter market are predominantly large system integrators, independent power producers and public utilities.

The increase in non-semiconductor sales was due to capacity expansion in the flat panel display market, capacity expansion in the solar panel market, growth of solar array installations in the U.S. and Europe for solar inverters and the addition of PV Powered to our 2010 revenue stream.

Total sales to our non-semiconductor equipment markets declined 47.6% in 2009 as compared to 2008 as these markets were also adversely affected by the pervasive factors previously mentioned, including the credit constraints in the financial markets and the negative trends in consumer spending. The drop in end-market demand reduced factory use and significantly reduced the need for capacity expansion in our non-semiconductor markets.

Sales to customers in the flat panel market increased 200.0% to \$28.5 million, or 6.2% of total sales in 2010 as compared to \$9.5 million, or 5.9% of total sales, in 2009. In this market, we are seeing a continued cycle of investing by panel manufacturers in Korea and the PRC which is driven by the market adoption of flat panels by Chinese consumers, the growth in touch screens for tablet PCs and smart phones and the migration of new technology such as LED backlighting and 3D televisions around the world. We anticipate continued investment in touch panel technology in 2011 and our near-term expectation is that sales in the flat panel market will increase slightly in 2011. Flat panel market sales decreased 56.3% in 2009 as compared to 2008 because of the overall economic downturn described earlier.

Sales to customers in the solar panel market increased 205.1% to \$58.8 million, or 12.8% of total sales, in 2010 as compared to \$19.3 million, or 11.9% of total sales, in 2009. Throughout 2010, we saw strong demand for our crystalline silicon PV products in both Europe and the PRC. We anticipate investment and demand for these products to remain stable for most of 2011. There have been indications of a slowdown in the European market as governments in many European countries have reduced available incentives and feed-in-tariffs. The PRC market is expected to grow due to the PRC government's investment in solar panel manufacturing capacity. The North American market grew in 2010 as larger megawatt output solar array projects resulted in an increase in the demand for solar panels. We anticipate that consumption of inventory will slow demand slightly in early 2011, but capacity for panel manufacturing remains high and we believe this will drive sales higher in the second half of the year.

Solar panel manufacturers installed substantial panel manufacturing capacity prior to 2010, and as a result of declining panel sales caused in part by the global recession, built significant inventory. The majority of solar panel manufacturers must work through their current inventory levels before their factory use will be at a point where they will need to expand capacity. This, and the general world-wide economic decline, resulted in decreased sales to customers in the solar market by 60.9% in 2009 as compared to 2008.

Sales to the solar inverter market grew 1,261.1% to \$105.7 million, or 23.0% of total sales, in 2010, as compared to \$7.8 million, or 4.8% of total sales, in 2009. Along with the global expansion of our Solaron inverter product, this increase was also driven by our acquisition of PV Powered. The majority of our sales in the inverter market continues to come from commercial and utility-scale applications. The addition of PV Powered's product portfolio expands the range of power capacities in which we can compete and added a line of residential inverters. We successfully installed our first inverters in the European market in 2010 and expect continued penetration in that market during 2011. Market demand in Europe may slow in 2011 because of changes to and/or reductions in feed-in-tariff incentives in certain countries, but we anticipate growth in demand in North America due to lucrative government incentives in Canada as well as planned investment by utilities in the United States. As a result of the above factors and full year of

inverter revenue associated with the acquisition of PV Powered, sales in this market will increase in 2011 as compared to 2010. Sales to the solar inverter market increased from \$2.4 million in 2008 to \$7.8 million in 2009 because of increased demand from commercial markets.

**Table of Contents***Global Support Revenue*

Global support revenue grew 29.7% to \$48.2 million, or 10.5% of total sales, in 2010 compared to \$37.1 million, representing 22.9% of sales, in 2009. The increase in global support sales was due to an increase in factory utilization by our customers throughout 2010, which drove demand for repairs, replacement parts and inventory restocking. The outlook for our service business in 2011 continues to be strong as we take advantage of a growing trend in the market related to reuse and repurposing of used equipment. Factory utilization is very high currently and our customers are looking to us to provide them with used and refurbished equipment to be used as spares for their fabrication lines. Additionally, we expect our service business in the inverter market to continue to grow as we increase the number of solar PV sites under operations and maintenance contracts.

Sales from our global support business decreased 34.5% in 2009 as compared to 2008 in part from a continuing practice by our customers of using spare parts inventory and idle equipment for spare parts in efforts to conserve cash as opposed to repairing malfunctioning or worn parts.

Applied Materials Inc., our largest customer, accounted for \$86.4 million, or 18.8% of our sales in 2010; \$34.7 million, or 21.4%, of our sales in 2009; and \$62.2 million, or 21.8%, of our sales in 2008. Our sales to Applied Materials included sales for the semiconductor capital equipment market, as well as the solar and flat panel display markets.

*GROSS PROFIT*

Our gross profit was \$199.2 million, or 43.4% of revenue in 2010, \$49.8 million, or 30.8% of revenue, in 2009 and \$109.6 million, or 38.4% of revenue, in 2008. The large increase in both absolute dollars and as a percentage of revenue in 2010 when compared to 2009 was due to an overall boost in production volume and increased leverage from factory overhead, plus reduced warranty costs as a percent of total sales resulting from lower warranty claims. We expect our gross profit to decrease slightly as a percentage of sales during 2011 since the gross margins related to our renewable inverter product is lower than the gross margins related to our traditional thin-films business. We anticipate gross margins to increase in terms of absolute dollars due to an increase in overall sales volume for 2011.

The decrease in our gross profit, in both absolute dollars and as a percentage of revenue, in 2009 as compared to 2008 was due to an overall decrease in production volume related to the weakness in the economy resulting in a lack of absorption of our factory costs therefore reducing our gross margin. In response to the decrease in production volume in 2009 we reduced our overall manufacturing costs by reducing fixed production and overhead costs including personnel costs and discretionary spending.

*OPERATING EXPENSE*

The following table summarizes our operating expenses as a percentage of sales for the years ended 2010, 2009 and 2008:

|                                     | Years Ended December 31, |        |       |        |      |       |        |    |       |
|-------------------------------------|--------------------------|--------|-------|--------|------|-------|--------|----|-------|
|                                     | 2010                     |        | 2009  |        | 2008 |       |        |    |       |
|                                     | (Dollars in thousands)   |        |       |        |      |       |        |    |       |
| Research and development            | \$                       | 56,604 | 12.3% | 41,132 | \$   | 25.4% | 52,125 | \$ | 18.3% |
| Selling, general and administrative |                          | 74,543 | 16.3% | 38,040 |      | 23.5% | 48,241 |    | 16.9% |
| Impairment of goodwill              |                          |        | 0.0%  | 63,260 |      | 39.1% |        |    | 0.0%  |

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|                                   |            |       |            |       |            |       |
|-----------------------------------|------------|-------|------------|-------|------------|-------|
| Amortization of intangible assets | 2,864      | 0.6%  | 122        | 0.1%  | 462        | 0.2%  |
| Restructuring charges             |            | 0.0%  | 4,376      | 2.7%  | 3,487      | 1.2%  |
| Total operating expenses          | \$ 134,011 | 29.2% | \$ 146,930 | 90.8% | \$ 104,315 | 36.6% |

In response to the extremely unfavorable global economic and industry conditions, we implemented cost reductions in 2009. Some of the cost reductions were business restructuring which were permanent in



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nature. These included reductions of personnel headcounts across all functions and geographies and consolidation of facilities on a worldwide basis. Additionally, we implemented cost-cutting initiatives that were more temporary in nature such as cuts in discretionary spending, including travel expense and professional fees, as well as pay cuts for management-level personnel, company-wide shutdowns and reductions in employee benefits. In order to meet the current level of demand, as well as implement strategic projects that drive continued international growth and sales opportunities, we increased headcount in 2010 and, as a result, incurred more discretionary spending in 2010 than in 2009.

The rapid increase in demand in the markets we serve has challenged our production capacity as well as our ability to meet the tight deadlines of our customers. As a result, we increased spending in our production facilities in order to meet our customers' demands and take full advantage of the market opportunities presented to us in 2010. Additionally, we added employees and operating expenses related to the acquisition of PV Powered as well as for the infrastructure necessary to expand our global presence to new markets throughout the world. While these increases were necessary to successfully manage the current rate and speed of our business, we remain committed to sustaining prudent spending levels.

### *Research and Development*

The markets we serve constantly present opportunities to develop products for new or emerging applications and require technological changes driving for higher performance, lower cost, and other attributes that will advance our customers' products. We believe that continued and timely development of new and differentiated products, as well as enhancements to existing products to support customer requirements, are critical for us to compete in the markets we serve. Accordingly, we devote significant personnel and financial resources to the development of new products and the enhancement of existing products, and we expect these investments to continue. All of our research and development costs have been expensed as incurred.

The increase in research and development expenses of \$15.5 million in the twelve months ended December 31, 2010 as compared to the same period in 2009 was driven primarily by slight increases in personnel costs, including the reversal of the temporary cost control efforts implemented in 2009 and 2008, outside consulting and travel. Additionally, this variance includes increased spending as a result of the engineering personnel absorbed in the PV Powered acquisition. We continue to focus on new product development and, although we have maintained a very cautious approach to our discretionary spending in 2010, we anticipate that research and development expenses will continue to increase in 2011 in terms of absolute dollars, due to a full year of employee costs related to the acquisition of PV Powered. Research and Development costs should decrease as a percentage of sales.

The decrease in research and development expenses of \$11.0 million in 2009 as compared to 2008 was driven primarily by decreases of \$9.5 million in personnel costs, \$1.5 million in engineering material, and \$0.3 million in travel costs. The large decrease in engineering material was offset by an \$0.8 million charge for excess engineering inventory, which is charged to expense at time of purchase. Overall, the decrease in material costs was due to more effective spending controls related to engineering projects.

### *Selling, General and Administrative*

Our selling expenses support domestic and international sales and marketing activities that include personnel, trade shows, advertising, third-party sales representative commissions, and other selling and marketing activities. Our general and administrative expenses support our worldwide corporate, legal, tax, financial, governance, administrative, information systems and human resource functions in addition to our general management.

The increase in SG&A expenses of \$36.5 million in 2010 as compared to 2009 was primarily driven by increases in sales personnel, commissions and travel expenses to meet the expectations and demands of our global customers, increased personnel costs related to the reversal of the temporary cost control efforts described earlier in this section, and the accrual of incentive compensation totaling \$16.5 million during 2010 as compared to no incentive compensation expense in 2009. We incurred \$0.8 million of transaction costs related to the acquisition of PV Powered during 2010 as well as additional costs related to employees added

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through the acquisition. We are aware of the growing needs of our customers during this period of revenue growth and we anticipate that SG&A expenses will continue to increase in 2011 in terms of absolute dollars due to an expected increase in sales as well as a full year of employee costs related to our acquisition of PV Powered. In 2011 we will continue to closely scrutinize and monitor increases to our SG&A expenses throughout the year and we anticipate that these costs will remain within their current range as a percentage of sales.

Continued reduction of personnel-related and other discretionary costs drove overall SG&A costs lower by \$10.2 million in 2009 as compared to 2008. Personnel costs decreased by \$4.8 million, purchased services decreased by \$2.5 million, and travel was reduced by \$1.8 million in 2009 as compared to 2008, offset by a \$1.1 million increase in bad debt expense. The increase in bad debt expense in 2009 was a result of certain customers' deteriorating financial condition.

### *Goodwill Impairment Charge*

We perform a goodwill impairment analysis using the two-step method annually as of October 31 and whenever events or changes in circumstances indicate that the carrying value of goodwill may not be recoverable. The recoverability of goodwill is measured by comparing the carrying amount of the applicable reporting unit, including goodwill, to its fair market value.

Based upon a combination of factors in early 2009, including a significant decline in our market capitalization below our carrying value, the deteriorating macro-economic environment, which had resulted in a significant decline in customer demand, and illiquidity in the overall credit markets, we concluded that sufficient indicators existed to require us to perform an interim goodwill impairment analysis at February 28, 2009.

We determined our fair market value at February 28, 2009 based on our market capitalization and an average weighting of both projected discounted future cash flows and the use of comparative market multiples and relative control premiums. The use of comparative market multiples (the market approach) uses other comparable companies valuation multiples to arrive at a fair value. The use of discounted cash flows was based on assumptions that were consistent with our estimates of future growth and our strategic plan to manage the underlying business, and also included a probability-weighted expectation as to our future cash flows. Factors requiring significant judgment include assumptions related to future growth rates, discount factors, and tax rates, along with other considerations.

Having determined that our goodwill was potentially impaired, we performed the second step of the goodwill impairment analysis which involved allocating the overall estimated fair value of the Company to all of our assets and liabilities other than goodwill (including both recognized and unrecognized intangible assets) and comparing the residual amount to the carrying value of goodwill. In March 2009, we determined that our goodwill was fully impaired and recorded a non-cash goodwill impairment charge of \$63.3 million. This charge eliminated the goodwill balance as of December 31, 2009.

All goodwill on our Consolidated Balance Sheet as of December 31, 2010 resulted from the acquisition of PV Powered.

### *Amortization Expense*

Amortization expense was \$2.9 million for the twelve months ended December 31, 2010, compared to \$0.1 million for the same period ending December 31, 2009 and \$0.5 million for the same period ending December 31, 2008. The increase of \$2.7 million in 2010 from 2009 is due to the acquisition of approximately \$51.3 million in amortizable assets with the purchase of PV Powered. It is estimated that amortization expense will continue to increase to approximately \$3.7 million in 2011 and will continue to increase in the foreseeable future. See Note 10 *Intangible*

*Asset* to our Consolidated Financial Statements for additional information on intangible assets and related future amortization.

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### *Restructuring Charges*

Restructuring costs are related to actions taken in 2009 and 2008 primarily in response to downturns in our markets. These costs were incurred to exit an activity or cancel an existing contractual obligation, including the closure of facilities and employee termination related charges.

We implemented cost reduction efforts in response to deteriorating economic conditions and weakening demand from our end markets. As a result, we incurred restructuring costs of \$4.4 million in 2009. The costs incurred were primarily severance and benefits related to reductions in personnel. We did not incur any restructuring costs in 2010. We continue to look for ways to make our global workforce more efficient and effective, which may lead to additional cost reduction activities in the future.

In 2008, we recognized restructuring costs of \$3.5 million, of which \$3.2 million was associated with global cost reduction plans with respect to reductions in personnel implemented at various times throughout the year. The remaining \$0.3 million of restructuring charges recognized in 2008 were a result of a plan to transition the production of a number of our legacy products from our manufacturing facility in Fort Collins, Colorado to our manufacturing facility in Shenzhen, PRC. This activity in 2008 led to the elimination of approximately 140 positions on a worldwide basis.

### *Other Income, Net*

Other income (expense), net consists primarily of interest income and expense, foreign exchange gains and losses and other miscellaneous items.

Interest income for the twelve month period ending December 31, 2010, 2009 and 2008 has consistently decreased each year from \$5.0 million in 2008 to \$1.4 million in 2009 to \$0.5 million in 2010 as a result of much lower interest rates available in financial markets in 2010 and 2009 compared to 2008 and moving more dollars out of investments and into unrestricted cash over this three year period.

Other income, net was \$1.7 million in 2010, \$0.5 million in 2009 and a \$2.1 million loss in 2008. The increase in 2010 as compared to 2009 was mainly due to \$1.2 million in net revenue recognized in 2010 from PV Powered's participation in the Solar Energy Grid System Program sponsored by the Department of Energy. This was offset by a \$0.8 million decrease in interest income in 2010 resulting from lower interest rates.

### *Provision for Income Taxes*

During 2010, we were profitable in almost all the jurisdictions in which we operated. As a result, we accrued income taxes at statutory rates that vary by location. We recorded an income tax provision of \$13.8 million during the year ended December 31, 2010. The 2010 income tax provision consisted of \$6.2 million of tax on income in foreign jurisdictions and \$7.6 million of U.S. federal and state income taxes.

In the second half of 2009, we reconfigured our legal entity structure to realign our PRC manufacturing operations with the intellectual property utilized in such manufacturing. On December 31, 2009, we transferred the economic rights to our patents and know-how between affiliates throughout the world, including our parent company. As a result of this realignment, we generated \$84.4 million of taxable income during 2009 in the United States and Japan and, thus, reversed a portion of our valuation allowance and utilized previously reserved deferred tax assets upon filing our 2009 tax return.

In 2009, we recorded an income tax provision of \$6.6 million. The provision was driven primarily by \$6.3 million of tax on income in foreign jurisdictions and \$1.0 million of federal income tax, which was comprised of \$3.6 million of tax expense related to reserves for uncertain tax positions, offset by \$2.6 million of federal benefit. The remainder related to \$0.7 million benefit for state taxes.

Our future effective income tax rate depends on various factors, such as tax legislation and the geographic composition of our pre-tax income. We carefully monitor these factors and timely adjust our effective income tax rate accordingly.

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*Discontinued Operations*

On October 15, 2010, we completed the sale of our gas flow control business, which includes the Aera® mass flow control and related product lines to Hitachi Metals, Ltd., for \$43.3 million. Assets and liabilities sold include, without limitation, inventory, real property in Hachioji, Japan, equipment, certain contracts, intellectual property rights related to the gas flow control business and certain warranty liability obligations. During the fourth quarter of 2010, we recorded a \$12.5 million gain on the asset disposition, net of \$1.7 million in taxes. The results of continuing operations were reduced by the revenue and costs associated with the gas flow control business which are included in the Income (Loss) from Discontinued Operations, net of taxes, in our Consolidated Statements of Operations.

*SEGMENT REPORTING IN FISCAL 2011*

The combination of PV Powered's solar inverter product line with our Solaron inverter product line resulted in revenue growth, both in absolute dollars and as a percentage of our overall revenue. Serving the inverter market has proven to require management, marketing, sales and engineering efforts that are uniquely different from those of our traditional thin-film capital equipment market. As a result, management has announced the creation of two focused business units within the Company effective January 1, 2011. The two business units, Thin Films Deposition Power Conversion and Thermal Instrumentation ( Thin Films ) and Renewable Power Inverters ( Renewables ), will enable improved execution and a strategic focus on two distinct markets.

The Thin Films business unit will principally serve our OEM and end customers in the semiconductor, flat panel display, solar module and other capital equipment markets, while the Renewables business unit will focus on residential, commercial and utility-scale solar projects and installations, selling primarily to distributors, Engineering, Procurement, and Construction contractors ( EPC's ), developers, and utility companies. The creation of these two units will enable greater focus on each business' unique needs and requirements, allowing each to expand and accelerate our growth by better serving each of these very different industries.

Due to the structure of our internal organization, the design of our internal systems and the manner in which expenses were tracked and managed, we are unable to recast our financial statements by operating segment for 2010 and prior without significant cost and effort. Therefore, segment information based on the two new business units for 2008, 2009 and 2010 has not been reported as it is impracticable to do so.

**Table of Contents****QUARTERLY RESULTS OF OPERATIONS**

The following tables present unaudited quarterly results in dollars and as a percentage of sales for each of the eight quarters in the period ended December 31, 2010. We believe that all necessary adjustments have been included in the amounts stated below to present fairly such quarterly information. Due to the volatility of the industries in which our customers operate, the operating results for any quarter are not necessarily indicative of results for any subsequent period.

|   | <b>Quarter Ended</b>                         |                           |                          |                          |                          |                           |                          |                          |
|---|--|---------------------------|--------------------------|--------------------------|--------------------------|---------------------------|--------------------------|--------------------------|
|   | <b>Dec. 31,<br/>2010</b>                     | <b>Sept. 30,<br/>2010</b> | <b>Jun. 30,<br/>2010</b> | <b>Mar. 31,<br/>2010</b> | <b>Dec. 31,<br/>2009</b> | <b>Sept. 30,<br/>2009</b> | <b>Jun. 30,<br/>2009</b> | <b>Mar. 31,<br/>2009</b> |
|   | <b>(In thousands, except per share data)</b> |                           |                          |                          |                          |                           |                          |                          |
| Operating Profit                              | \$ 148,653                                   | \$ 140,966                | \$ 100,107               | \$ 69,687                | \$ 58,081                | \$ 43,452                 | \$ 31,551                | \$ 28,300                |
| Restructuring                                 | 64,743                                       | 60,690                    | 44,559                   | 29,207                   | 23,269                   | 13,855                    | 6,932                    | 5,100                    |
| Goodwill impairment                           |  |                           |                          |                          | 6                        | 235                       | 739                      | 3,300                    |
| Operating income (loss)                       | 23,962                                       | 22,296                    | 13,094                   | 5,836                    | 2,207                    | (5,630)                   | (13,474)                 | (80,300)                 |
| Income (loss) from continuing operations, net | 19,730                                       | 17,557                    | 11,457                   | 4,850                    | 1,676                    | (8,352)                   | (15,817)                 | (79,300)                 |
| Income (loss) from continuing operations, net | 11,678                                       | 2,392                     | 2,162                    | 1,367                    | (153)                    | (79)                      | (217)                    | (4,300)                  |
| Income (loss)                                 | 31,408                                       | 19,949                    | 13,619                   | 6,217                    | 1,523                    | (8,431)                   | (16,034)                 | (79,300)                 |
| <b>Earnings per Share:</b>                    |  |                           |                          |                          |                          |                           |                          |                          |
| <b>Continuing Operations:</b>                 |  |                           |                          |                          |                          |                           |                          |                          |
| Basic earnings (loss) per share               | \$ 0.46                                      | \$ 0.41                   | \$ 0.27                  | \$ 0.12                  | \$ 0.04                  | \$ (0.20)                 | \$ (0.38)                | \$ (1.00)                |
| Diluted earnings (loss) per share             | \$ 0.45                                      | \$ 0.40                   | \$ 0.26                  | \$ 0.11                  | \$ 0.04                  | \$ (0.20)                 | \$ (0.38)                | \$ (1.00)                |
| <b>Continued Operations:</b>                  |  |                           |                          |                          |                          |                           |                          |                          |
| Basic earnings (loss) per share               | \$ 0.27                                      | \$ 0.06                   | \$ 0.05                  | \$ 0.03                  | \$ (0.00)                | \$ (0.00)                 | \$ (0.01)                | \$ (0.00)                |
| Diluted earnings (loss) per share             | \$ 0.27                                      | \$ 0.05                   | \$ 0.05                  | \$ 0.03                  | \$ (0.00)                | \$ (0.00)                 | \$ (0.01)                | \$ (0.00)                |
| <b>Income (Loss):</b>                         |  |                           |                          |                          |                          |                           |                          |                          |
| Basic earnings (loss) per share               | \$ 0.73                                      | \$ 0.46                   | \$ 0.32                  | \$ 0.15                  | \$ 0.04                  | \$ (0.20)                 | \$ (0.38)                | \$ (1.00)                |
| Diluted earnings (loss) per share             | \$ 0.72                                      | \$ 0.45                   | \$ 0.31                  | \$ 0.15                  | \$ 0.04                  | \$ (0.20)                 | \$ (0.38)                | \$ (1.00)                |
| <b>Percentage of Sales</b>                    |  |                           |                          |                          |                          |                           |                          |                          |
| Sales   | 100.0%                                       | 100.0%                    | 100.0%                   | 100.0%                   | 100.0%                   | 100.0%                    | 100.0%                   | 100.0%                   |



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|   |       |       |       |       |        |         |         |          |
|---|-------|-------|-------|-------|--------|---------|---------|----------|
| Gross Profit                                    | 43.6% | 43.1% | 44.5% | 41.9% | 40.1%  | 31.9%   | 22.0%   | 19.9%    |
| Restructuring                                   | 0.0%  | 0.0%  | 0.0%  | 0.0%  | 0.0%   | 0.5%    | 2.3%    | 11.8%    |
| Goodwill impairment                             | 0.0%  | 0.0%  | 0.0%  | 0.0%  | 0.0%   | 0.0%    | 0.0%    | 219.9%   |
| Operating income (loss)                         | 16.1% | 15.8% | 13.1% | 8.4%  | 3.8%   | (13.0%) | (42.7%) | (279.0%) |
| Income (loss) from continuing operations, net   | 13.3% | 12.5% | 11.4% | 7.0%  | 2.9%   | (19.2%) | (50.1%) | (275.8%) |
| Income (loss) from discontinued operations, net | 7.9%  | 1.7%  | 2.2%  | 2.0%  | (0.3%) | (0.2%)  | (0.7%)  | (1.5%)   |
| Net income (loss)                               | 21.1% | 14.2% | 13.6% | 8.9%  | 2.6%   | (19.4%) | (50.8%) | (277.3%) |

### Impact of Inflation

In recent years, inflation has not had a significant impact on our operations. However, we continuously monitor operating price increases, particularly in connection with the supply of component parts used in our manufacturing process. To the extent permitted by competition, we pass increased costs on to our customers by increasing sales prices over time. Sales price increases, however, were not significant in any of the years presented herein.

### Liquidity and Capital Resources

#### *LIQUIDITY*

Our ability to fund our operations, acquisitions, capital expenditures and product development efforts will depend on our ability to generate cash from operating activities which is subject to future operating performance as well as general economic, financial, competitive, legislative, regulatory and other conditions, some of which may be beyond our control. Our primary sources of liquidity are our available cash, investments and cash generated from current operations. We have no line of credit or other external sources of liquidity.

At December 31, 2010, we had \$140.6 million in cash, cash equivalents and marketable securities. We believe that adequate liquidity and cash generation will be important to the execution of our strategic initiatives. We believe that our current cash levels and our cash flows from future operations will be adequate to meet anticipated working capital needs, anticipated levels of capital expenditures and contractual obligations for the next twelve months.

**Table of Contents***CASH FLOWS*

A summary of our cash provided by and used in operating, investing and financing activities is as follows:

|   | <b>Years Ended December 31,</b> |             |             |
|---|---------------------------------|-------------|-------------|
|   | <b>2010</b>                     | <b>2009</b> | <b>2008</b> |
|   | <b>(In thousands)</b>           |             |             |
| Net cash provided by operating activities           | \$ 18,342                       | \$ 9,190    | \$ 24,077   |
| Net cash provided by (used in) investing activities | (16,710)                        | 12,958      | 44,497      |
| Net cash provided by (used in) financing activities | 1,378                           | (3,395)     | (47,879)    |
| Effect of currency translation on cash              | (5,202)                         | (2,095)     | 1,165       |
| <br>  |                                 |             |             |
| Net change in cash and cash equivalents             | (2,192)                         | 16,658      | 21,860      |
| Cash and cash equivalents, beginning of the year    | 133,106                         | 116,448     | 94,588      |
| <br>  |                                 |             |             |
| Cash and cash equivalents, end of the period        | \$ 130,914                      | \$ 133,106  | \$ 116,448  |

*2010 CASH FLOWS COMPARED TO 2009**Net cash provided by operating activities*

Net cash provided by operating activities for the twelve months ended December 31, 2010 was \$18.3 million, compared to \$9.2 million for the same period ended December 31, 2009. The \$9.1 million increase in net cash flows from operating activities was largely due to a \$173.9 million increase in net income between 2010 and 2009. We used cash from operations to invest in inventory to support the significant growth of our sales. The increase in accounts payable from December 31, 2009 to December 31, 2010 was due to a large increase in sales and purchasing volume in the fourth quarter of 2010 when compared to the much slower fourth quarter of 2009.

*Net cash flows provided by (used in) investing activities*

Net cash flows provided by (used in) investing activities changed by \$29.7 million to a \$16.7 million use of cash during the year ended December 31, 2010 as compared to a \$13.0 million source of cash provided by investing activities for the same period during 2009. During the year ended December 31, 2010, we converted a net \$34.5 million of marketable securities to cash, we purchased PV Powered paying approximately \$75.6 million in net cash, we sold our gas flow control business for \$43.3 million in cash, and we spent \$18.9 million for capital expenditures. We intend to continue to acquire testing equipment to sustain our engineering and new product development efforts as well as capacity expansion for the production of inverters, which will increase as a result of our acquisition of PV Powered. Future capital expenditures are expected to be funded through cash flows from operations.

During the twelve months ended December 31, 2009, we generated a total of \$13.0 million of cash flows from investing activities due to \$18.6 million in net sales of marketable securities, offset by the purchase of \$5.6 million of capital equipment. Capital expenditures in 2010 and 2009 primarily include the cost of lab and testing equipment to support sustaining engineering and new product development efforts as well as capacity expansion for the production of our Solaron® Inverter.

*Net cash flows provided by (used in) financing activities*

Net cash flows provided by (used in) financing activities increased by \$4.8 million compared to 2009. During the year ended December 31, 2010, we received \$1.4 million for the exercise of stock options, net of related transaction costs, as compared to \$0.5 million of stock options in the same period in 2009.

**Table of Contents***2009 CASH FLOWS COMPARED TO 2008**Net cash provided by operating activities*

Net cash provided by operating activities during the twelve months ended December 31, 2009 was \$9.2 million, compared to \$24.1 million of cash provided by operating activities during the twelve months ended December 31, 2008. The \$14.9 million decrease in net cash flows from operating activities was due to a \$100.9 million decrease in net income, offset by a \$50.2 million net increase in non-cash reconciling items such as goodwill impairment, depreciation and amortization, stock-based compensation, restructuring charges, and our provision for deferred income taxes. In addition, in 2009, we had a \$35.8 million net increase in cash flows from changes in operating assets and liabilities, principally the depletion of inventory and cash retained from an increase in accounts payable. The increase in accounts payable from December 31, 2008 as compared to December 31, 2009 was primarily the result of our decision to extend payment terms to our vendors.

*Net cash flows provided by investing activities*

Net cash flows provided by investing activities decreased \$31.5 million in 2009 as compared to 2008 mainly due to a \$33.1 million decrease in net proceeds from the sale of marketable securities. During 2008, our \$51.7 million in net proceeds from the sale of marketable securities was used to help us finance the \$49.8 million buy-back of our common shares during 2008.

*Net cash flows used in financing activities*

Our net cash used in financing activities was \$3.4 million in 2009 as compared to \$47.9 million in 2008. In 2009, we incurred a \$3.8 million cash outflow applicable to our excess tax benefit from stock-based compensation with no comparable transaction in 2008. In 2008, our \$47.9 million net cash used in financing activities was mainly due to the repurchase of our common shares.

*Effect of currency translation on cash*

The net effect of foreign currency translations on cash changed \$3.1 million to a \$5.2 million negative impact for the year ended December 31, 2010 compared to a \$2.1 million negative impact for the year ended December 31, 2009. The effect of currency translation on cash changed \$3.3 million to a \$2.1 million negative impact for the year ended December 31, 2009 compared to a \$1.2 million positive impact for the year ended December 31, 2008.

The functional currencies of our worldwide operations primarily include U.S. dollar ( USD ), Japanese Yen ( JPY ), Chinese Yuan ( CNY ), New Taiwan Dollar ( NTD ), South Korean Won ( KWN ), British Pound ( GBP ) and Euro ( EUR ). Our purchasing and sales activities are primarily denominated in USD, JPY, CNY and EUR. The change in these key currency rates during the years ended December 31, 2010, 2009 and 2008 are as follows:

| From | To  | Years Ended December 31, |        |         |
|------|-----|--------------------------|--------|---------|
|      |     | 2010                     | 2009   | 2008    |
| CNY  | USD | 3.4%                     | (0.1)% | 7.2%    |
| EUR  | USD | (7.2%)                   | 3.5%   | (5.4%)  |
| JPY  | USD | 13.7%                    | (1.7)% | 23.7%   |
| KWN  | USD | 3.0%                     | 9.1%   | (25.8%) |
| NTD  | USD | 9.7%                     | 2.4%   | (0.7%)  |

GBP

USD

(4.3%)

11.0%

(26.8%)

**Off Balance Sheet Arrangements**

We have no off-balance sheet arrangements or variable interest entities.

**Table of Contents****Contractual Obligations**

The following table sets forth our future payments due under contractual obligations as of December 31, 2010:

| <b>Contractual Obligations:</b> | <b>Total</b>     | <b>Less than<br/>1 year</b> | <b>1 -3 years<br/>(In thousands)</b> | <b>3-5 years</b> | <b>More than<br/>5<br/>years</b> |
|---------------------------------|------------------|-----------------------------|--------------------------------------|------------------|----------------------------------|
| Operating lease obligations     | \$ 22,940        | \$ 5,894                    | \$ 9,884                             | \$ 6,455         | \$ 707                           |
| Purchase obligations            | 63,514           | 63,514                      |                                      |                  |                                  |
| <b>Total</b>                    | <b>\$ 86,454</b> | <b>\$ 69,408</b>            | <b>\$ 9,884</b>                      | <b>6,455</b>     | <b>\$ 707</b>                    |

Our purchase obligations include \$0.6 million applicable to capital additions.

As of December 31, 2010, we have \$14.2 million in uncertain tax positions, net of federal benefit. Because of the uncertainty of the amounts to be ultimately paid as well as the timing of such payments, these liabilities are not reflected in the contractual obligations table. Purchase obligations include firm commitments and agreements with various suppliers to ensure the availability of components.

**Recent Accounting Pronouncements**

From time to time, the Financial Accounting Standards Board ( FASB ) or other standards setting bodies issue new accounting pronouncements. Updates to the FASB Accounting Standards Codification ( ASC ) are communicated through issuance of an Accounting Standards Update ( ASU ). Unless otherwise discussed, we believe that the impact of recently issued guidance, whether adopted or to be adopted in the future, is not expected to have a material impact on our Consolidated Financial Statements upon adoption.

To understand the impact of recently issued guidance, whether adopted or to be adopted, please review the information provided in our Note 1 *Operations and Summary of Significant Accounting Policies and Estimates* to our Consolidated Financial Statements included in Item 8 of this Form 10-K.

**ITEM 7A. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK****Market Risk and Risk Management**

In the normal course of business, we have exposures to interest rate risk from our investments and foreign exchange rate risk related to our foreign operations and foreign currency transactions.

**Interest Rate Risk**

Our market risk exposure relates to changes in interest rates in our investment portfolio. We generally place our investments with high-credit quality issuers and by policy are averse to principal loss and seek to protect and preserve our invested funds by limiting default risk, market risk and reinvestment risk. As of December 31, 2010, our investments consisted primarily of treasury bills, certificates of deposit, corporate bonds, agency bonds and institutional money markets, all with maturity of less than 1 year.

As a measurement of the sensitivity of our portfolio and assuming that our investment portfolio balances remain constant, a hypothetical decrease of 100 basis points (1%) in interest rates would decrease annual pre-tax earnings by approximately \$0.1 million.

**Foreign Currency Exchange Rate Risk**

We are impacted by changes in foreign currency exchange rates through sales and purchasing transactions when we sell product and purchase materials in currencies different from the currency in which product and manufacturing costs were incurred. The functional currencies of our worldwide facilities primarily include the USD, EUR, KWN, NTD, GBP, and CNY. Our purchasing and sales activities are primarily denominated in the USD, EUR and CNY. We may be impacted by changes in the relative buying power of our customers, which may impact sales volumes either positively or negatively. As these currencies fluctuate

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against each other, and other currencies, we are exposed to foreign currency exchange rate risk on sales, purchasing transactions and labor.

From time to time, we enter into foreign currency exchange rate contracts to hedge against changes in foreign currency exchange rates on assets and liabilities expected to be settled at a future date. Market risk arises from the potential adverse effects on the value of derivative instruments that result from a change in foreign currency exchange rates. We did not execute foreign currency forward exchange rate contract transactions in 2010 or 2009, but we may consider investing in such contracts during 2011. We minimize our market risk applicable to foreign currency exchange rate contracts by establishing and monitoring parameters that limit the types and degree of our derivative contract instruments. We enter into derivative contract instruments for risk management purposes only. We do not enter into or issue derivatives for trading or speculative purposes.

Our reported financial results of operations, including the reported value of our assets and liabilities, are also impacted by changes in foreign currency exchange rates. Assets and liabilities of substantially all of our subsidiaries outside the U.S. are translated at period end rates of exchange for each reporting period. Operating results and cash flow statements are translated at weighted-average rates of exchange during each reporting period. Although these translation changes have no immediate cash impact, the translation changes may impact future borrowing capacity, and overall value of our net assets.

Currency exchange rates vary daily and often one currency strengthens against the USD while another currency weakens. Because of the complex interrelationship of the worldwide supply chains and distribution channels, it is difficult to quantify the impact of a change in one or more particular exchange rates.



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**ITEM 8. FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA**

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**REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM**

Board of Directors and Shareholders  
Advanced Energy Industries, Inc.

We have audited the accompanying balance sheets of Advanced Energy Industries, Inc. (a Delaware corporation) and subsidiaries (collectively, the Company) as of December 31, 2010 and 2009, and the related consolidated statements of operations, stockholders' equity, and cash flows for each of the three years in the period ended December 31, 2010. These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on these financial statements based on our audits.

We conducted our audits in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the financial position of Advanced Energy Industries, Inc. and subsidiaries as of December 31, 2010 and 2009, and the results of their operations and their cash flows for each of the three years in the period ended December 31, 2010, in conformity with accounting principles generally accepted in the United States of America.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States), Advanced Energy Industries, Inc. and subsidiaries' internal control over financial reporting as of December 31, 2010, based on criteria established in *Internal Control - Integrated Framework* issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO) and our report dated March 2, 2011, expressed an unqualified opinion and exclusion of PV Powered, Inc.

/s/ GRANT THORNTON LLP

Denver, Colorado  
March 2, 2011

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**REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM**

Board of Directors and Shareholders

Advanced Energy Industries, Inc.

We have audited Advanced Energy Industries, Inc. (a Delaware Corporation) and subsidiaries (collectively, the Company) internal control over financial reporting as of December 31, 2010, based on criteria established in *Internal Control - Integrated Framework* issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO). The Company's management is responsible for maintaining effective internal control over financial reporting and for its assessment of the effectiveness of internal control over financial reporting, included in the accompanying *Management's Report on Internal Control over Financial Reporting* appearing under Item 9A of the Company's Annual Report on Form 10-K for the year ended December 31, 2010 (Management's Report). Our responsibility is to express an opinion on the Company's internal control over financial reporting based on our audit. Our audit of, and opinion on, the Company's internal control over financial reporting does not include internal control over financial reporting of PV Powered, Inc., a wholly owned subsidiary, whose financial statements reflect total assets and revenues constituting 29% and 14%, respectively, of the related consolidated financial statement amounts as of and for the year ended December 31, 2010. As indicated in *Management's Report*, PV Powered, Inc. was acquired during 2010 and therefore, management's assertion on the effectiveness of the Company's internal control over financial reporting excluded internal control over financial reporting of PV Powered, Inc.

We conducted our audit in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects. Our audit included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, testing and evaluating the design and operating effectiveness of internal control based on the assessed risk, and performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion.

A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

In our opinion, Advanced Energy Industries, Inc. and subsidiaries maintained, in all material respects, effective internal control over financial reporting as of December 31, 2010, based on criteria established in *Internal Control - Integrated Framework* issued by COSO.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States), the consolidated balance sheets of Advanced Energy Industries, Inc. and subsidiaries as of December 31, 2010 and 2009, and the related consolidated statements of operations, stockholders' equity, and cash flows for each of the three years in the period ended December 31, 2010, and our report dated March 2, 2011, expressed an unqualified opinion.

/s/ GRANT THORNTON LLP

Denver, Colorado

March 2, 2011

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**ADVANCED ENERGY INDUSTRIES, INC.**  
**Consolidated Balance Sheets**  
(In thousands, except per share amounts)

|   | <b>December 31,</b> |                   |
|---|---------------------|-------------------|
|   | <b>2010</b>         | <b>2009</b>       |
| <b>ASSETS</b>   |                     |                   |
| <b>CURRENT ASSETS:</b>  |                     |                   |
| Cash and cash equivalents   | \$ 130,914          | \$ 133,106        |
| Marketable securities   | 9,640               | 44,401            |
| Accounts receivable, net of allowances of \$3,440 and \$1,975, respectively | 119,893             | 50,267            |
| Inventories   | 77,593              | 28,567            |
| Deferred income tax assets  | 7,510               | 9,222             |
| Income taxes receivable   | 6,061               |                   |
| Assets of business held for sale  |                     | 26,460            |
| Other current assets  | 10,156              | 5,641             |
| <b>Total current assets</b>   | <b>361,767</b>      | <b>297,664</b>    |
| Property and equipment, net   | 34,569              | 18,687            |
| Deposits and other  | 8,874               | 9,295             |
| Goodwill  | 48,360              |                   |
| Other intangible assets, net  | 48,421              |                   |
| Deferred income tax assets  | 3,166               | 19,479            |
| <b>Total assets</b>   | <b>\$ 505,157</b>   | <b>\$ 345,125</b> |
| <br><b>LIABILITIES AND STOCKHOLDERS EQUITY</b>                              |                     |                   |
| <b>CURRENT LIABILITIES:</b>   |                     |                   |
| Accounts payable  | \$ 56,185           | \$ 23,802         |
| Income taxes payable  | 3,602               | 3,503             |
| Accrued payroll and employee benefits                                       | 23,202              | 6,118             |
| Accrued warranty expense  | 7,144               | 7,005             |
| Other accrued expenses  | 5,389               | 4,277             |
| Customer deposits   | 6,803               | 3,152             |
| Liabilities of business held for sale                                       |                     | 1,477             |
| <b>Total current liabilities</b>  | <b>102,325</b>      | <b>49,334</b>     |
| Deferred income tax liabilities   | 5,155               | 1,200             |
| Uncertain tax positions   | 14,176              | 14,987            |
| Accrued warranty expense  | 5,805               |                   |
| Other long-term liabilities   | 3,728               | 1,270             |
| <b>Total liabilities</b>  | <b>131,189</b>      | <b>66,791</b>     |
| Commitments and contingencies (Note 15)                                     |                     |                   |

STOCKHOLDERS EQUITY:

|  |            |            |
|--|------------|------------|
| Preferred stock, \$0.001 par value, 1,000 shares authorized, none issued and outstanding                                 |            |            |
| Common stock, \$0.001 par value, 70,000 shares authorized; 43,330 and 42,044 shares issued and outstanding, respectively | 43         | 42         |
| Additional paid-in capital   | 258,398    | 233,623    |
| Retained earnings  | 88,453     | 17,261     |
| Accumulated other comprehensive income   | 27,074     | 27,408     |
| Total stockholders equity  | 373,968    | 278,334    |
| Total liabilities and stockholders equity  | \$ 505,157 | \$ 345,125 |

The accompanying notes are an integral part of these Consolidated Financial Statements.

**Table of Contents****ADVANCED ENERGY INDUSTRIES, INC.****Consolidated Statements of Operations**

(In thousands, except per share amounts)

|   | <b>Years Ended December 31,</b> |                     |                   |
|---|---------------------------------|---------------------|-------------------|
|   | <b>2010</b>                     | <b>2009</b>         | <b>2008</b>       |
| SALES   | \$ 459,414                      | \$ 161,846          | \$ 285,166        |
| COST OF SALES   | 260,215                         | 112,056             | 175,596           |
| GROSS PROFIT  | 199,199                         | 49,790              | 109,570           |
| OPERATING EXPENSES:   |                                 |                     |                   |
| Research and development  | 56,604                          | 41,132              | 52,125            |
| Selling, general and administrative                             | 74,543                          | 38,040              | 48,241            |
| Impairment of goodwill  |                                 | 63,260              |                   |
| Amortization of intangible assets                               | 2,864                           | 122                 | 462               |
| Restructuring charges   |                                 | 4,376               | 3,487             |
| Total operating expenses  | 134,011                         | 146,930             | 104,315           |
| OPERATING INCOME (LOSS)   | 65,188                          | (97,140)            | 5,255             |
| Interest income   | 539                             | 1,371               | 4,955             |
| Other income (expense), net                                     | 1,682                           | 539                 | (2,072)           |
| Total other income  | 2,221                           | 1,910               | 2,883             |
| Income (loss) from continuing operations before income taxes    | 67,409                          | (95,230)            | 8,138             |
| Provision for income taxes                                      | 13,816                          | 6,582               | 14,639            |
| INCOME (LOSS) FROM CONTINUING OPERATIONS, NET OF INCOME TAXES   | 53,593                          | (101,812)           | (6,501)           |
| Gain on sale of discontinued operations, net of income taxes    | 12,531                          |                     |                   |
| Results from discontinued operations, net of income taxes       | 5,068                           | (893)               | 4,722             |
| INCOME (LOSS) FROM DISCONTINUED OPERATIONS, NET OF INCOME TAXES | 17,599                          | (893)               | 4,722             |
| <b>NET INCOME (LOSS)</b>  | <b>\$ 71,192</b>                | <b>\$ (102,705)</b> | <b>\$ (1,779)</b> |
| Basic weighted-average common shares outstanding                | 42,862                          | 41,966              | 42,537            |
| Diluted weighted-average common shares outstanding              | 43,419                          | 41,966              | 42,537            |
| <b>EARNINGS PER SHARE:</b>                                      |                                 |                     |                   |
| CONTINUING OPERATIONS:  |                                 |                     |                   |

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|  |    |      |    |        |    |        |
|--|----|------|----|--------|----|--------|
| BASIC EARNINGS (LOSS) PER SHARE          | \$ | 1.25 | \$ | (2.43) | \$ | (0.15) |
| DILUTED EARNINGS (LOSS) PER SHARE        | \$ | 1.23 | \$ | (2.43) | \$ | (0.15) |
| DISCONTINUED OPERATIONS                  |    |      |    |        |    |        |
| BASIC EARNINGS (LOSS) PER SHARE          | \$ | 0.41 | \$ | (0.02) | \$ | 0.11   |
| DILUTED EARNINGS (LOSS) PER SHARE        | \$ | 0.41 | \$ | (0.02) | \$ | 0.11   |
| <b>NET INCOME (LOSS):</b>                |    |      |    |        |    |        |
| <b>BASIC EARNINGS (LOSS) PER SHARE</b>   | \$ | 1.66 | \$ | (2.45) | \$ | (0.04) |
| <b>DILUTED EARNINGS (LOSS) PER SHARE</b> | \$ | 1.64 | \$ | (2.45) | \$ | (0.04) |

The accompanying notes are an integral part of these Consolidated Financial Statements.



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**ADVANCED ENERGY INDUSTRIES, INC.**  
**Consolidated Statements of Stockholders Equity**  
(In thousands)

|  | Common Stock<br>Shares | Common Stock<br>Amount | Additional<br>Paid-in<br>Capital | Retained<br>Earnings | Accumulated<br>Other<br>Comprehensive<br>Income | Total<br>Stockholders<br>Equity |
|--|------------------------|------------------------|----------------------------------|----------------------|---|---------------------------------|
| BALANCES, December 31, 2007                            | 45,288                 | \$ 45                  | \$ 267,205                       | \$ 121,745           | \$ 18,066                                       | \$ 407,061                      |
| Stock issued from equity plans                         | 336                    |                        | 1,610                            |                      |   | 1,610                           |
| Stock-based compensation                               |                        |                        | 5,094                            |                      |   | 5,094                           |
| Stock buyback  | (3,775)                | (3)                    | (49,770)                         |                      |   | (49,773)                        |
| Comprehensive income:                                  |                        |                        |                                  |                      |   |                                 |
| Equity adjustment from foreign<br>currency translation |                        |                        |                                  |                      | 14,001  | 14,001                          |
| Unrealized holding gain                                |                        |                        |                                  |                      | 335   | 335                             |
| Net loss   |                        |                        |                                  | (1,779)              |   | (1,779)                         |
| Total comprehensive income                             |                        |                        |                                  |                      |   | 12,557                          |
| BALANCES, December 31, 2008                            | 41,849                 | 42                     | 224,139                          | 119,966              | 32,402  | 376,549                         |
| Stock issued from equity plans                         | 195                    |                        | 146                              |                      |   | 146                             |
| Stock-based compensation                               |                        |                        | 5,766                            |                      |   | 5,766                           |
| Excess tax benefit from<br>stock-based compensation    |                        |                        | 3,818                            |                      |   | 3,818                           |
| Japan cash repatriation                                |                        |                        | (246)                            |                      |   | (246)                           |
| Comprehensive income:                                  |                        |                        |                                  |                      |   |                                 |
| Equity adjustment from foreign<br>currency translation |                        |                        |                                  |                      | (4,985)   | (4,985)                         |
| Unrealized holding losses                              |                        |                        |                                  |                      | (9)   | (9)                             |
| Net loss   |                        |                        |                                  | (102,705)            |   | (102,705)                       |
| Total comprehensive income                             |                        |                        |                                  |                      |   | (107,699)                       |
| BALANCES, December 31, 2009                            | 42,044                 | 42                     | 233,623                          | 17,261               | 27,408  | 278,334                         |
| Stock issued from equity plans                         | 288                    |                        | 1,397                            |                      |   | 1,397                           |
| Stock issued for acquisition of PV<br>Powered          | 998                    | 1                      | 14,689                           |                      |   | 14,690                          |
| Stock-based compensation                               |                        |                        | 8,501                            |                      |   | 8,501                           |
| Excess tax benefit from<br>stock-based compensation    |                        |                        | 188                              |                      |   | 188                             |
| Comprehensive income:                                  |                        |                        |                                  |                      |   |                                 |
| Equity adjustment from foreign<br>currency translation |                        |                        |                                  |                      | (343)   | (343)                           |
| Unrealized holding gains (losses)                      |                        |                        |                                  |                      | 9   | 9                               |

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|                             |        |    |    |    |         |    |        |    |        |    |         |
|-----------------------------|--------|----|----|----|---------|----|--------|----|--------|----|---------|
| Net Income                  |        |    |    |    | 71,192  |    |        |    | 71,192 |    |         |
| Total comprehensive income  |        |    |    |    |         |    |        |    | 70,858 |    |         |
| BALANCES, December 31, 2010 | 43,330 | \$ | 43 | \$ | 258,398 | \$ | 88,453 | \$ | 27,074 | \$ | 373,968 |

The accompanying notes are an integral part of these Consolidated Financial Statements.

**Table of Contents****ADVANCED ENERGY INDUSTRIES, INC.****Consolidated Statements of Cash Flows**

|  | <b>Years Ended December 31,</b> |              |             |
|--|---------------------------------|--------------|-------------|
|  | <b>2010</b>                     | <b>2009</b>  | <b>2008</b> |
|  | <b>(In thousands)</b>           |              |             |
| <b>CASH FLOWS FROM OPERATING ACTIVITIES:</b>   |                                 |              |             |
| Net income (loss)  | \$ 71,192                       | \$ (102,705) | \$ (1,779)  |
| Adjustments to reconcile net income (loss) to net cash provided by operating activities, net of assets and liabilities acquired: |                                 |              |             |
| Depreciation and amortization  | 10,736                          | 9,014        | 10,718      |
| Goodwill impairment charge   |                                 | 63,260       |             |
| Stock-based compensation expense   | 8,501                           | 5,766        | 5,094       |
| Provision (benefit) for deferred income taxes  | 5,284                           | (5,283)      | 7,927       |
| Restructuring charges  |                                 | 4,376        | 3,487       |
| Net gain on disposal of gas flow control business  | (12,531)                        |              |             |
| Net loss on disposal of assets   |                                 | 323          | 19          |
| Changes in operating assets and liabilities, net of assets acquired:   |                                 |              |             |
| Accounts receivable  | (62,136)                        | 7,053        | 9,596       |
| Inventories  | (41,299)                        | 11,175       | 3,437       |
| Other current assets   | (6,318)                         | (1,573)      | 370         |
| Accounts payable   | 26,519                          | 15,797       | (4,596)     |
| Other current liabilities and accrued expenses   | 27,163                          | 1,726        | (3,217)     |
| Income taxes   | (9,188)                         | 5,364        | (2,615)     |
| Non-current assets   | 469                             | (4,785)      | (2,269)     |
| Non-current liabilities  | (50)                            | (318)        | (2,095)     |
| Net cash provided by operating activities  | 18,342                          | 9,190        | 24,077      |
| <b>CASH FLOWS FROM INVESTING ACTIVITIES:</b>   |                                 |              |             |
| Purchase of marketable securities  | (109,516)                       | (247,017)    | (439,091)   |
| Proceeds from sale of marketable securities  | 144,055                         | 265,586      | 490,790     |
| Proceeds from sale of gas flow control business  | 43,260                          |              |             |
| Purchase of PV Powered, Inc., net of cash acquired   | (75,577)                        |              |             |
| Purchase of property and equipment   | (18,932)                        | (5,611)      | (7,202)     |
| Net cash provided by (used in) investing activities  | (16,710)                        | 12,958       | 44,497      |
| <b>CASH FLOWS FROM FINANCING ACTIVITIES:</b>   |                                 |              |             |
| Payments on capital lease obligations  | (209)                           | (85)         | (120)       |
| Purchase and retirement of treasury stock  |                                 |              | (49,767)    |
| Proceeds from exercise of stock options  | 1,397                           | 508          | 2,008       |
| Excess tax benefit from stock-based compensation deduction   | 190                             | (3,818)      |             |

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|   |            |            |            |
|---|------------|------------|------------|
| Net cash provided by (used in) financing activities                     | 1,378      | (3,395)    | (47,879)   |
| <b>EFFECT OF CURRENCY TRANSLATION ON CASH</b>                           | (5,202)    | (2,095)    | 1,165      |
| <b>INCREASE (DECREASE ) IN CASH AND CASH EQUIVALENTS</b>                | (2,192)    | 16,658     | 21,860     |
| CASH AND CASH EQUIVALENTS, beginning of period                          | 133,106    | 116,448    | 94,588     |
| <b>CASH AND CASH EQUIVALENTS, end of period</b>                         | \$ 130,914 | \$ 133,106 | \$ 116,448 |
| <b>SUPPLEMENTAL DISCLOSURE OF CASH FLOW INFORMATION:</b>                |            |            |            |
| Cash paid for interest  | \$ 55      | \$ 16      | \$ 9       |
| Cash paid for income taxes  | 25,182     | 6,355      | 6,052      |
| Cash received for refunds of income taxes                               | 1,687      |            |            |
| Cash held in banks outside the United States                            | 22,032     | 66,148     | 73,516     |
| <b>NONCASH TRANSACTIONS:</b>  |            |            |            |
| Common stock issued as partial consideration for PV Powered acquisition | \$ 14,690  | \$         | \$         |

The accompanying notes are an integral part of these Consolidated Financial Statements.

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**ADVANCED ENERGY INDUSTRIES, INC.**

**NOTES TO CONSOLIDATED FINANCIAL STATEMENTS**

In this Annual Report on Form 10-K, we use the terms Advanced Energy, we, our, and us to refer to Advanced Energy Industries, Inc. and its subsidiaries.

**NOTE 1. OPERATIONS AND SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES AND ESTIMATES**

We design, manufacture, sell and support power conversion products that transform power into various usable forms. Our products enable manufacturing processes that use thin-film deposition for various products, such as semiconductor devices, flat panel displays, solar panels and architectural glass. We also supply thermal instrumentation products for advanced temperature control in the thin-film process for these same markets. Our solar inverter products support renewable power generation solutions for residential, commercial and utility-scale solar projects and installations. Our network of global service support centers offer repair services, conversions, upgrades and refurbishments to companies using our products. We also offer a wide variety of operations and maintenance service plans that can be tailored for individual photovoltaic ( PV ) sites of all sizes.

**Principles of Consolidation** Our Consolidated Financial Statements include our accounts and the accounts of our wholly-owned subsidiaries. All intercompany accounts and transactions have been eliminated. Our Consolidated Financial Statements are stated in United States dollars and have been prepared in accordance with accounting principles generally accepted in the United States ( U.S. GAAP ).

**Use of Estimates in the Preparation of the Consolidated Financial Statements** The preparation of our consolidated financial statements in conformity with U.S. GAAP requires us to make estimates, assumptions and judgments that affect the reported amounts of assets and liabilities, and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenue and expenses during the reporting period. We believe that the significant estimates, assumptions and judgments when accounting for items and matters such as allowances for doubtful accounts, excess and obsolete inventory, warranty reserves, acquisitions, asset valuations, asset life, depreciation, amortization, recoverability of assets, impairments, deferred revenue, stock option and restricted stock grants, taxes, and other provisions are reasonable, based upon information available at the time they are made. Actual results may differ from these estimates, making it possible that a change in these estimates could occur in the near term.

**Reclassifications** We have reclassified certain amounts in our 2009 and 2008 Consolidated Financial Statements to reflect assets held for sale and discontinued operations. These reclassifications had no impact on our financial position or results of operations.

**Foreign Currency Translation** The functional currency of our foreign subsidiaries is their local currency, with the exception of our manufacturing facility in Shenzhen, The Peoples Republic of China ( PRC ) where the United States dollar is the functional currency. Assets and liabilities of foreign subsidiaries are translated to United States dollars at period-end exchange rates, and our Consolidated Statements of Operations and Cash Flows are translated at average exchange rates during the period. Resulting translation adjustments are recorded as a separate component of stockholders' equity.

Transactions denominated in currencies other than the local currency are recorded based on exchange rates at the time such transactions arise. Subsequent changes in exchange rates result in foreign currency transaction gains and losses

which are reflected in income as unrealized (based on period end translation) or realized (upon settlement of the transactions).

***Fair Value of Financial Instruments*** We value our financial assets and liabilities using fair value measurements. Fair value is based on the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. The carrying amount of cash and cash equivalents, marketable securities, accounts receivable, other current assets, accounts payable,

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**ADVANCED ENERGY INDUSTRIES, INC.**

**NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)**

accrued liabilities and other current liabilities in our Consolidated Financial Statements approximates fair value because of the short-term nature of the instruments.

***Cash and Cash Equivalents*** We consider all amounts on deposit with financial institutions and highly liquid investments with an original maturity of three months or less to be cash equivalents. Cash and cash equivalents are highly liquid investments that consist primarily of short-term money market instruments and demand deposits with insignificant interest rate risk and original maturities of three months or less at the time of purchase.

Sometimes we invest excess cash in money market funds not insured by the Federal Deposit Insurance Corporation. We believe that the investments in money market funds are on deposit with credit worthy financial institutions and that the funds are highly liquid. The investments in money market funds are reported at fair value, with interest income recorded in earnings and are included in Cash and cash equivalents. The fair values of our investments in money market funds are based on the quoted market prices.

***Marketable Securities*** All of our investments in marketable securities are classified as available-for-sale at the respective balance sheet dates. Marketable securities classified as available-for-sale are recorded at fair value based upon quoted market prices, and any temporary difference between the cost and fair value of the investment is presented as a separate component of accumulated other comprehensive income (loss). We recognize gains and losses on the date our investments mature or are sold and record these gains and losses in other income, net. The specific identification method is used to determine the gains and losses on investments in marketable securities.

***Concentrations of Credit Risk*** Financial instruments, which potentially subject us to credit risk, include cash and cash equivalents, marketable securities and trade accounts receivable. To preserve capital and maintain liquidity, we invest with financial institutions we deem to be of high quality and sound financial condition. Our investments are in low-risk instruments and we limit our credit exposure in any one institution or type of investment instrument based upon criteria including creditworthiness.

At December 31, 2010, our accounts receivable from ULVAC, Inc. were \$13.0 million comprising 10.5% of our total accounts receivable. At December 31, 2009, our accounts receivable from Applied Materials, Inc. were \$8.2 million comprising 15.6% of our total accounts receivable. No other customer balance exceeded 10% of our total accounts receivable balance at December 31, 2010 and 2009. We have established an allowance for doubtful accounts based upon factors surrounding the credit risk of specific customers, historical trends and other information.

***Accounts Receivable and Allowance for Doubtful Accounts*** Accounts receivable are recorded at net realizable value. We maintain a credit approval process and we make significant judgments in connection with assessing our customers' ability to pay at the time of shipment. Despite this assessment, from time to time, our customers are unable to meet their payment obligations. We continuously monitor our customers' credit worthiness and use our judgment in establishing a provision for estimated credit losses based upon our historical experience and any specific customer collection issues that we have identified. While such credit losses have historically been within our expectations and the provisions established, there is no assurance that we will continue to experience the same credit loss rates that we have in the past. A significant change in the liquidity or financial position of our customers could have a material adverse impact on the collectability of accounts receivable and our future operating results.

**Table of Contents****ADVANCED ENERGY INDUSTRIES, INC.****NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)**

Changes in allowance for doubtful accounts are summarized as follows:

|  | Years Ended December 31, |          |         |
|--|--------------------------|----------|---------|
|  | 2010                     | 2009     | 2008    |
|  | (In thousands)           |          |         |
| Balance beginning of period              | \$ 1,975                 | \$ 971   | \$ 360  |
| Additions charged to expense             | 1,814                    | 2,822    | 1,654   |
| Deductions write-offs, net or recoveries | (349)                    | (1,818)  | (1,043) |
| Balance end of period                    | \$ 3,440                 | \$ 1,975 | \$ 971  |

**Inventories** Inventories include costs of materials, direct labor, manufacturing overhead, in-bound freight and duty. Inventories are valued at the lower of cost (first-in, first-out method) or market and are presented net of reserves for excess and obsolete inventory.

Reserves are provided for excess and obsolete inventory. We regularly review inventory quantities on hand and record a provision to write-down excess and obsolete inventory to its estimated net realizable value, if less than cost, based primarily on our estimated forecast of product demand. Demand for our products can fluctuate significantly. A significant decrease in demand could result in an increase in the charges for excess inventory quantities on hand.

In addition, our industry is subject to technological change, new product development and product technological obsolescence that could result in an increase in the amount of obsolete inventory quantities on hand. Therefore, any significant unanticipated changes in demand or technological developments could have a significant impact on the value of our inventory and our reported operating results.

**Property and Equipment** Property and equipment is stated at cost or estimated fair value if acquired in a business combination. Depreciation is computed using the straight-line method over the following estimated useful lives:

|   |                |
|---|----------------|
| Buildings   | 20 to 40 years |
| Machinery, equipment, furniture and fixtures and vehicles | 3 to 10 years  |
| Computer and communication equipment                      | 3 years        |

Amortization of leasehold improvements and leased equipment is calculated using the straight-line method over the lease term or the estimated useful life of the assets, whichever period is shorter. Additions, improvements, and major renewals are capitalized, while maintenance, repairs and minor renewals are expensed as incurred. When depreciable assets are retired, or otherwise disposed of, the cost and related accumulated depreciation are removed from the accounts and any related gains or losses are included in other income, net, in our Consolidated Statements of Operations.

**Intangible Assets, Goodwill and Other Long-Lived Assets** We completed our acquisition of PV Powered in May 2010 for a total cost of \$90.3 million. As a result of our acquisition, we identified and recorded intangible assets and



goodwill. Intangible assets are valued based on estimates of future cash flows and amortized over their estimated useful lives. Goodwill is subject to annual impairment testing as well as testing upon the occurrence of any event that indicates a potential impairment. Intangible assets and other long-lived assets are subject to an impairment test if there is an indicator of impairment. The carrying value and ultimate realization of these assets is dependent upon our estimates of future earnings and benefits that we expect to generate from their use. If our expectations of future results and cash flows are significantly diminished, intangible assets and goodwill may be impaired and the resulting charge to operations may be material. When we determine that the carrying value of intangibles or other long-lived assets may not be recoverable based upon the existence of one or more indicators of impairment, we use the projected

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**ADVANCED ENERGY INDUSTRIES, INC.**

**NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)**

undiscounted cash flow method to determine whether an impairment exists, and then measure the impairment using discounted cash flows.

The estimation of useful lives and expected cash flows require us to make significant judgments regarding future periods that are subject to some factors outside of our control. Changes in these estimates can result in significant revisions to our carrying value of these assets and may result in material charges to our results of operations.

To measure impairment for goodwill, we compare the fair value of our reporting units by measuring discounted cash flows to the book value of the reporting units. Goodwill would be impaired if the resulting implied fair value of goodwill was less than the recorded book value of the goodwill. We perform a goodwill impairment analysis using the two-step method on an annual basis as of October 31 and whenever events or changes in circumstances indicate that the carrying value of goodwill may not be recoverable. The recoverability of goodwill is measured by comparing the carrying amount of the applicable reporting unit, including goodwill, to its fair market value.

Based upon a combination of factors, including a significant decline in our market capitalization below our carrying value, the deteriorating macro-economic environment, which had resulted in a significant decline in customer demand, and illiquidity in the overall credit markets, we performed an interim goodwill impairment analysis at February 28, 2009. Based on our market capitalization, an average weighting of both projected discounted future cash flows, the use of comparative market multiples and relative control premiums, we determined that our goodwill was potentially impaired. We performed the second step of the goodwill impairment analysis which involves allocating the overall estimated fair value of the Company to all of our assets and liabilities other than goodwill and determined that our goodwill was fully impaired. In March 2009, we recorded a non-cash goodwill impairment charge of \$63.3 million, and as a result, we had no goodwill as of December 31, 2009.

**Revenue Recognition** We recognize revenue from product sales upon transfer of title and risk of loss to our customers provided that there is evidence of an arrangement, the sales price is fixed or determinable and the collection of the related receivable is reasonably assured. In most transactions, we have no obligations to our customers after the date products are shipped other than pursuant to warranty obligations. For customers purchasing our Renewables products, we provide installation, support and services after the product has been shipped. We defer the fair value of any undelivered elements until the undelivered element is delivered. Fair value is the price charged when the element is sold separately. Shipping and handling fees billed to customers, if any, are recognized as revenue. The related shipping and handling costs are recognized in cost of sales.

We maintain a worldwide support organization in seven countries, including the United States, the PRC, Japan, Korea, Taiwan, Germany and England. Support services include warranty and non-warranty repair services, upgrades and refurbishments on the products we sell. Revenue from repairs and replacements that are non-warranty in nature are recognized as the work is performed, on a time and materials basis. Repairs that are covered under our standard warranty do not generate revenue.

Arrangements that include multiple deliverables are evaluated to determine whether the elements are separable based on objective evidence. If the elements are deemed separable, total consideration is allocated to each element and the revenue associated with each element is recognized as earned. If the elements are not deemed separable, total consideration is deferred and recognized when all elements are delivered or, if the agreement involves services, ratably over the longer of the contractual period or the expected customer relationship period.

We also provide our customers with extended warranty and preventive maintenance service contract options on the products we sell. Any up-front fees received for extended warranties or maintenance plans are deferred and recognized ratably over the service periods as defined in the agreements. We deferred revenue

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**ADVANCED ENERGY INDUSTRIES, INC.**

**NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)**

related to extended warranties totaling \$5.9 million as of December 31, 2010 and \$1.0 million as of December 31, 2009, including the current portion.

Based on the credit worthiness of certain customers, we may require payment prior to the manufacture or shipment of products purchased by these customers. Cash payments received prior to shipment are recorded as customer deposits and deferred revenue and then recognized as revenue as appropriate based upon the transfer of title to the products. We do not offer price protection to customers, or allow returns, unless covered by our normal policy for repair of defective products.

*Customer payments*

We occasionally agree to make payments to certain customers in order to participate in anticipated sales activity. Payments made to customers are accounted for as a reduction of revenue unless they are made in exchange for identifiable goods or services with fair values that can be reasonably estimated. These reductions in revenues are recognized immediately to the extent that the payments cannot be attributed to anticipated future sales, and are recognized in future periods to the extent that the payments relate to future sales, based on the specific facts and circumstances underlying each payment.

***Taxes Collected from Customers*** In the course of doing business we collect various taxes from customers including, but not limited to, sales taxes and value added taxes. It is our policy to record revenue net of taxes collected from customers in our Consolidated Statements of Operations.

***Shipping and Handling Costs*** Amounts billed to customers for shipping and handling are recorded in sales. Shipping and handling costs incurred by us for the delivery of products to customers are included in cost of sales.

***Advertising Costs*** Advertising costs are expensed when incurred and are included in selling, general and administrative expenses.

***Research and Development Expenses*** Costs incurred to advance, test or otherwise modify our proprietary technology or develop new technologies are considered research and development costs and are expensed when incurred. These costs are primarily comprised of costs associated with the operation of our laboratories and research facilities, including internal labor, materials and overhead.

***Warranty Costs*** We provide for the estimated costs to fulfill customer warranty obligations upon the recognition of the related revenue. We offer warranty coverage for a majority of our thin-film products for periods typically ranging from 12 to 24 months after shipment. We warrant our solar inverter products for five to ten years. We estimate the anticipated costs of repairing our products under such warranties based on the historical costs of the repairs and any known specific product issues. The assumptions we use to estimate warranty accruals are reevaluated periodically in light of actual experience product, configuration and geographic region and, when appropriate, the accruals are adjusted based on specific estimates of project repair costs and quantity of product returns. Should product failure rates differ from our estimates, actual costs could vary significantly from our expectations.

***Stock-Based Compensation*** Accounting for stock-based compensation requires the measurement and recognition of compensation expense for all share-based payment awards made to employees and directors based on estimated fair values. We have estimated the fair value of stock options on the date of grant using the Black-Scholes-Merton pricing

model, which is affected by our stock price as well as assumptions regarding a number of complex and subjective variables. These variables include our expected stock price volatility over the term of the awards, actual and projected employee option exercise behaviors, risk free interest rate and expected dividends. We also estimate forfeitures at the time of grant and revise those estimates in subsequent periods if actual forfeitures differ from our estimates. Our expected volatility assumption is based on our historical daily closing price of our stock over a period equivalent to the expected life of the options.

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**ADVANCED ENERGY INDUSTRIES, INC.**

**NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)**

***Income Taxes*** We follow the liability method of accounting for income taxes under which deferred tax assets and liabilities are recognized for future tax consequences. A deferred tax asset or liability is computed for both the expected future impact of differences between the financial statement and tax basis of assets and liabilities and for the expected future tax benefit to be derived from tax loss and tax credit carry-forwards. Valuation allowances are established, when necessary, to reduce deferred tax assets to the amount expected to be realized, based upon an assessment of both negative and positive evidence, in future tax returns. Tax rate changes are reflected in the period such changes are enacted.

We assess the recoverability of our net deferred tax assets and the need for a valuation allowance on a quarterly basis. Our assessment includes a number of factors including historical results and taxable income projections for each jurisdiction. The ultimate realization of deferred income tax assets is dependent on the generation of taxable income in appropriate jurisdictions during the periods in which those temporary differences are deductible. We consider the scheduled reversal of deferred income tax liabilities, projected future taxable income, and tax planning strategies in determining the amount of the valuation allowance. Based on the level of historical taxable income and projections for future taxable income over the periods in which the deferred income tax assets are deductible, we determine if we will realize the benefits of these deductible differences.

Accounting for income taxes requires a two-step approach to recognize and measure uncertain tax positions. In general, we are subject to regular examination of our income tax returns by the Internal Revenue Service and other tax authorities. The first step is to evaluate the tax position for recognition by determining if, based on the technical merits, it is more likely than not that the position will be sustained upon audit, including resolutions of related appeals or litigation processes, if any. The second step is to measure the tax benefit as the largest amount that is more than 50% likely of being realized upon ultimate settlement. We regularly assess the likelihood of favorable or unfavorable outcomes resulting from these examinations to determine the adequacy of our provision for income taxes. This evaluation is based on factors including, but not limited to, changes in facts or circumstances, changes in tax law, effectively settled issues under audit and new audit activity.

***Commitments and Contingencies*** From time to time we are involved in disputes and legal actions arising in the normal course of our business. While we currently believe that the amount of any ultimate loss would not be material to our financial position, the outcome of these actions is inherently difficult to predict. In the event of an adverse outcome, the ultimate loss could have a material adverse effect on our financial position or reported results of operations in a particular quarter. An unfavorable decision, particularly in patent litigation, could require material changes in production processes and products or result in our inability to ship products or components found to have violated third-party patent rights. We accrue loss contingencies when it is probable that a loss has occurred or will occur and the amount of the loss can be reasonably estimated. Our estimates of probability of losses are subjective, involve significant judgment and uncertainties and are based on the best information we have at any given point in time. Resolution of these uncertainties in a manner inconsistent with our expectations could have a significant impact on our results of operations and financial condition.

**NEW ACCOUNTING STANDARDS**

From time to time, the Financial Accounting Standards Board ( FASB ) or other standards setting bodies issue new accounting pronouncements. Updates to the FASB Accounting Standards Codification ( ASC ) are communicated through issuance of an Accounting Standards Update ( ASU ). Unless otherwise discussed, We believe that the impact of recently issued guidance, whether adopted or to be adopted in the future, is not expected to have a material impact

on the Consolidated Financial Statements upon adoption.

In January 2010, the Financial Accounting Standards Board ( FASB ) issued guidance to amend the disclosure requirements related to fair value measurements. The guidance requires new disclosures of

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**ADVANCED ENERGY INDUSTRIES, INC.**

**NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)**

significant transfers in and out of Levels 1 and 2, the reasons for the transfers, and separate reporting of purchases, sales, issuances and settlements in the roll forward of Level 3 activity. The guidance also clarifies that fair value measurement disclosures should be provided for each class of assets and liabilities and disclosures also should be provided about Level 2 and Level 3 valuation techniques and inputs used to measure fair value. This guidance became effective for us January 1, 2010, except for disclosures relating to purchases, sales, issuances and settlements of Level 3 assets and liabilities, which will be effective for us beginning January 1, 2011. As this guidance only requires expanded disclosures, the adoption did not and will not impact our consolidated financial position or results of operations.

In October 2009, the FASB issued a pronouncement that establishes the accounting and reporting guidance for arrangements including multiple revenue-generating activities and amends the criteria for separating deliverables and measuring and allocating arrangement consideration to one or more units of accounting. The amendments also establish a selling price hierarchy for determining the selling price of a deliverable. Significantly enhanced disclosures will be required to provide information about a vendor's multiple-deliverable revenue arrangements, including information about the nature and terms, significant deliverables, and its performance within arrangements. The amendments also require providing information about the significant judgments made, changes to those judgments and about how the application of the relative selling-price method affects the timing or amount of revenue recognition. We adopted this new pronouncement prospectively for revenue arrangements entered into or materially modified beginning January 1, 2011. The implementation of this authoritative guidance is not expected to have a material impact on our financial position or results of operations.

In April 2010, the FASB provided guidance on defining a milestone and determining when it may be appropriate to apply the milestone method of revenue recognition for research and development transactions, and requires certain disclosures regarding the use of the milestone method. The required disclosures must be provided for fiscal years beginning on or after June 15, 2010 and for interim periods within those fiscal years (fiscal year 2011 for us). We adopted this authoritative guidance on January 1, 2011 and it is not expected to have a material impact on our Consolidated Financial Statements.

**NOTE 2. BUSINESS ACQUISITION AND DISPOSITION**

**Acquisition**

On May 3, 2010, we acquired PV Powered, a privately-held Oregon corporation based in Bend, Oregon, pursuant to an Agreement and Plan of Merger dated March 24, 2010 between Advanced Energy, PV Powered and Neptune Acquisition Sub, Inc. ( Acquisition Sub ), an Oregon corporation and wholly-owned subsidiary of Advanced Energy, and Amendment No. 1 to the Agreement and Plan of Merger dated April 21, 2010 (together with the Agreement and Plan of Merger, the Merger Agreement ). Pursuant to the Merger Agreement, Acquisition Sub merged with and into PV Powered, with PV Powered being the surviving corporation and a wholly-owned subsidiary of Advanced Energy (the Merger or Acquisition ).

We acquired all of the outstanding PV Powered common stock for total consideration with a fair value of approximately \$90.3 million consisting of 1.0 million shares of Advanced Energy common stock with a market value of approximately \$14.7 million and cash payments totaling \$75.6 million, net of cash acquired.



PV Powered is a leading manufacturer of grid-tied PV inverters in the residential, commercial and utility-scale markets. PV Powered manufactures high-reliability transformer-based PV inverters utilized in residential, commercial roof top and ground mount systems in the North American market. Its inverters range in size from 30 kilowatts ( kW ) to two megawatts for the commercial market and 1kW to 5kW for the residential market, with market leading efficiency ratings.

PV Powered will continue to operate out of its facilities in Bend, Oregon as a subsidiary of Advanced Energy. The acquisition of PV Powered enables us to offer the solar inverter market a more complete suite of

**Table of Contents****ADVANCED ENERGY INDUSTRIES, INC.****NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)**

products in a wider power range and increases the number of solar array opportunities for which our products can be considered for purchase.

We recorded the acquisition of PV Powered using the acquisition method of accounting and the purchase price was allocated to the tangible assets, intangible assets and liabilities acquired based on estimated fair values. The excess of the purchase price (consideration transferred) over the respective fair values of identifiable assets and liabilities acquired was recorded as goodwill. The goodwill resulting from the acquisition is not tax deductible. The purchase price allocation is not final as of December 31, 2010, as we continue to evaluate the expected value of the pre-acquisition net operating losses of PV Powered. As of December 31, 2010, we had estimated the value of the pre-acquisition net operating losses to be \$1.9 million. Any adjustments to this amount in the final purchase price allocation will result in an adjustment to the recorded goodwill and will not affect our results of operations. Any changes in our ability to utilize the pre-acquisition net operating losses after the final purchase price allocation will be reported in earnings.

Direct transaction costs totaled approximately \$0.8 million and include investment banking, legal and accounting fees and other external costs directly related to the Acquisition and are included in selling, general and administrative expense in our Consolidated Statement of Operations.

The components of the fair value of the total consideration transferred for the PV Powered Acquisition are as follows (in thousands):

|   |    |        |
|---|----|--------|
| Cash paid to owners                           | \$ | 76,301 |
| Cash acquired                                 |    | (724)  |
| Common stock issued 997,966 shares            |    | 14,690 |
| <br>  |    |        |
| Total fair value of consideration transferred | \$ | 90,267 |

**Table of Contents****ADVANCED ENERGY INDUSTRIES, INC.****NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)**

The following table summarizes estimated fair values of the assets acquired and liabilities assumed as of May 3, 2010 (in thousands):

|   |    |          |
|---|----|----------|
| Accounts receivable                           | \$ | 4,777    |
| Inventories                                   |    | 8,363    |
| Other current assets                          |    | 277      |
| Deferred tax assets                           |    | 2,746    |
| Property and equipment                        |    | 4,065    |
| Deposits and other noncurrent assets          |    | 67       |
| Accounts payable                              |    | (5,480)  |
| Accrued liabilities                           |    | (2,744)  |
| Deferred tax liabilities                      |    | (18,711) |
| Other long-term liabilities                   |    | (2,739)  |
|   |    | (9,379)  |
| Amortizable intangible assets:                |    |          |
| Trademarks                                    |    | 5,277    |
| Technology                                    |    | 28,208   |
| In process research and development           |    | 14,868   |
| Customer relationships                        |    | 2,213    |
| Backlog                                       |    | 720      |
| Total amortizable intangible assets           |    | 51,286   |
| Total identifiable net assets                 |    | 41,907   |
| Goodwill                                      |    | 48,360   |
| Total fair value of consideration transferred | \$ | 90,267   |

A summary of the intangible assets acquired, amortization method and estimated useful lives follows (in thousands):

|                                     | <b>Amount</b> | <b>Amortization<br/>Method<br/>(In thousands)</b> | <b>Useful Life</b> |
|-------------------------------------|---------------|---|--------------------|
| Trademarks                          | \$ 5,277      | Accelerated                                       | 10 years           |
| Technology                          | 28,208        | Accelerated                                       | 7 years            |
| In process research and development | 14,868        | Accelerated                                       | 8 years            |
| Customer relationships              | 2,213         | Accelerated                                       | 7 years            |
| Backlog                             | 720           | Straight-line                                     | 6 months           |

\$ 51,286

The amortization of in process research and development will not begin until the specific project is complete and put into production.

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The results of PV Powered operations are included in our Consolidated Statements of Operations beginning May 3, 2010 as follows (in thousands):

**May 3, 2010 to December 31, 2010**

|            |    |        |
|------------|----|--------|
| Sales      | \$ | 65,748 |
| Net income |    | 8,745  |

*Pro Forma Results for PV Powered Acquisition*

The following unaudited *pro forma* financial information presents the combined results of operations of Advanced Energy and PV Powered as if the acquisition had occurred as of January 1, 2009. The pro forma financial information is presented for informational purposes and is not indicative of the results of operations that would have been achieved if the acquisition had taken place at January 1, 2009. The unaudited pro forma financial information for the years ended December 31, 2010 and 2009 includes the historical results of Advanced Energy for the years ended December 31, 2010 and 2009, historical results of PV Powered for the period January 1, 2009 to May 2, 2010, and the post-acquisition results of PV Powered for the period May 3, 2010 to December 31, 2010.

The unaudited pro forma results for all periods presented include amortization charges for acquired intangible assets and related tax effects. These pro forma results consider the sale of the gas flow control business and related product lines as discontinued operations. The unaudited pro forma results follow:

|                            | <b>(Unaudited)</b>                           |             |
|----------------------------|--|-------------|
|                            | <b>Years Ended December 31,</b>              |             |
|                            | <b>2010</b>                                  | <b>2009</b> |
|                            | <b>(In thousands, except per share data)</b> |             |
| Sales                      | \$ 471,274                                   | \$ 183,300  |
| Net income (loss)          | 80,806                                       | (112,244)   |
| Earnings (loss) per share: |  |             |
| Basic                      | \$ 1.87                                      | \$ (2.61)   |
| Diluted                    | 1.85   | (2.61)      |

**Disposition**

On October 15, 2010, we completed the sale of our gas flow control business, which includes the Aera<sup>®</sup> mass flow control and related product lines to Hitachi Metals, Ltd., for approximately \$43.3 million. Assets and liabilities sold include, without limitation, inventory, real property in Hachioji, Japan, equipment, certain contracts, intellectual property rights related to the gas flow control business and certain warranty liability obligations. During the fourth quarter of 2010, we recorded a \$12.5 million gain on the asset disposition, net of \$1.7 million in taxes.

In connection with the closing of this asset disposition, we entered into a Master Services Agreement and a Supplemental Transition Services Agreement where we will provide certain transition services until October 2011 and

we became an authorized service provider for Hitachi in all countries other than Japan.

In accordance with authoritative accounting guidance for reporting discontinued operations, the results of continuing operations were reduced by the revenue and costs associated with the gas flow control business which are included in the income (loss) from discontinued operations, net of taxes, in our Consolidated Statements of Operations.

**Table of Contents****ADVANCED ENERGY INDUSTRIES, INC.****NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)**

Operating results of discontinued operations are as follows:

|   | <b>2010</b>           | <b>2009</b> | <b>2008</b> |
|---|-----------------------|-------------|-------------|
|   | <b>(In thousands)</b> |             |             |
| Sales   | \$ 51,204             | \$ 24,549   | \$ 43,752   |
| Cost of sales   | 38,327                | 19,972      | 28,540      |
| Gross margin  | 12,877                | 4,577       | 15,212      |
| Operating expenses:   |                       |             |             |
| Research and development  | 1,922                 | 2,130       | 2,827       |
| Selling, general and administrative                                   | 3,301                 | 3,444       | 4,032       |
| Amortization  | 246                   | 491         | 484         |
| Total operating expenses  | 5,469                 | 6,065       | 7,343       |
| Operating income (loss) from discontinued operations                  | 7,408                 | (1,488)     | 7,869       |
| Gain on sale of net assets of discontinued operations                 | 14,249                |             |             |
| Income (loss) from discontinued operations before income taxes        | 21,657                | (1,488)     | 7,869       |
| Provision for income taxes:   |                       |             |             |
| Income taxes on operating income (loss) from discontinued operations  | 2,340                 | (595)       | 3,147       |
| Income taxes on gain on sale of net assets of discontinued operations | 1,718                 |             |             |
| Total provision for income taxes                                      | 4,058                 | (595)       | 3,147       |
| Income (loss) from discontinued operations, net of income taxes       | \$ 17,599             | \$ (893)    | \$ 4,722    |

Assets and liabilities held for sale consist of the following:

|                                  | <b>December 31,</b>   |             |
|----------------------------------|-----------------------|-------------|
|                                  | <b>2010</b>           | <b>2009</b> |
|                                  | <b>(In thousands)</b> |             |
| Assets                           |                       |             |
| Inventories                      | \$                    | \$ 8,551    |
| Property and equipment           |                       | 11,927      |
| Other intangible assets          |                       | 5,982       |
| Assets of business held for sale | \$                    | \$ 26,460   |

|                                       |    |    |       |
|---------------------------------------|----|----|-------|
| Liabilities                           |    |    |       |
| Accrued warranty expense              | \$ | \$ | 119   |
| Deferred income tax liabilities       |    |    | 1,357 |
| Other                                 |    |    | 1     |
| Liabilities of business held for sale | \$ | \$ | 1,477 |



**Table of Contents****ADVANCED ENERGY INDUSTRIES, INC.****NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)****NOTE 3. INCOME TAXES**

The provisions for income taxes for the years ended December 31, 2010, 2009 and 2008 are as follows:

|                 | <b>Years Ended December 31,</b> |             |             |
|-----------------|---------------------------------|-------------|-------------|
|                 | <b>2010</b>                     | <b>2009</b> | <b>2008</b> |
|                 | <b>(In thousands)</b>           |             |             |
| Federal         | \$ 6,445                        | \$ 1,018    | \$ 7,312    |
| State and local | 1,194                           | (697)       | 1,200       |
| Foreign taxes   | 6,177                           | 6,261       | 6,127       |
|                 | \$ 13,816                       | \$ 6,582    | \$ 14,639   |
| Current         | \$ 7,170                        | \$ 11,865   | \$ 6,822    |
| Deferred        | 6,646                           | (5,283)     | 7,817       |
|                 | \$ 13,816                       | \$ 6,582    | \$ 14,639   |

The following reconciles our effective tax rate on income from continuing operations to the federal statutory rate for the years ended December 31, 2010, 2009 and 2008:

|  | <b>Years Ended December 31,</b> |             |             |
|--|---------------------------------|-------------|-------------|
|  | <b>2010</b>                     | <b>2009</b> | <b>2008</b> |
|  | <b>(In thousands)</b>           |             |             |
| Income taxes per federal statutory rate                      | \$ 23,566                       | \$ (33,851) | \$ 5,602    |
| State income taxes, net of federal deduction                 | 849                             | 411         | (524)       |
| Repatriation of foreign earnings, net of foreign tax credits | (4,590)                         |             |             |
| Intellectual property transfer                               |                                 | 33,130      |             |
| Nondeductible goodwill impairment                            |                                 | 22,140      |             |
| Effect of foreign taxes at different rates                   | (7,597)                         | 901         | (7,942)     |
| Change in valuation allowance                                |                                 | (18,360)    | 17,984      |
| Other permanent items, net                                   | 1,588                           | 2,211       | (481)       |
|  | \$ 13,816                       | \$ 6,582    | \$ 14,639   |

**Table of Contents****ADVANCED ENERGY INDUSTRIES, INC.****NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)**

The sources of our net deferred income tax assets are summarized as follows:

|  | <b>December 31,</b>   |             |
|--|-----------------------|-------------|
|  | <b>2010</b>           | <b>2009</b> |
|  | <b>(In thousands)</b> |             |
| Current:                                       |                       |             |
| Employee bonuses and commissions               | \$ 823                | \$ 27       |
| Warranty reserve                               | 2,649                 | 2,443       |
| Bad debt reserve                               | 913                   | 590         |
| Vacation accrual                               | 966                   | 510         |
| Excess and obsolete inventory                  | 4,182                 | 3,932       |
| Other  | (356)                 | 3,249       |
| Valuation allowance                            | (1,793)               | (1,529)     |
| Current  | 7,384                 | 9,222       |
| Long-term:                                     |                       |             |
| Net operating loss and tax credit carryforward | 14,419                | 17,507      |
| Depreciation and amortization, net             | (17,136)              | 2,212       |
| Other  | 3,924                 | 2,021       |
| Valuation allowance                            | (3,197)               | (3,461)     |
| Long-term, net                                 | (1,990)               | 18,279      |
| Total deferred tax assets, net                 | \$ 5,394              | \$ 27,501   |

As of December 31, 2010, we had a gross federal net operating loss, foreign tax credit and research and development credit carryforwards of approximately \$15.8 million, \$2.3 million and \$6.1 million, respectively, which may be available to offset future federal income tax liabilities. All of the gross federal net operating losses are limited by certain provision of the U.S. tax code which restricts their utilization in the future and a valuation allowance of \$5.0 million has been provided as realization of these benefits is not expected.

In the second half of 2009, we reconfigured our legal entity structure to realign our Chinese manufacturing operations with the intellectual property utilized in such manufacturing. At December 31, 2009, we transferred the economic rights to our patents and know-how between affiliates throughout the world, including the parent company. As a result of this realignment, we generated \$84.4 million of taxable income in the United States and Japan and, thus, reversed \$35.3 million of our valuation allowance and we utilized previously reserved deferred tax assets.

The federal net operating loss, foreign tax credits and research and development credit carry forwards expire at various dates through December 31, 2030, including \$5.8 million and \$4.6 million of the federal net operating loss expiring on December 31, 2022 and December 31, 2023 respectively. The foreign tax credit carryforward expires on December 31, 2030. As of December 31, 2010, we had a gross foreign net operating loss carryforward of \$0.6 million

which may be available to offset future foreign income tax liabilities. The foreign net operating loss carryforward generated in the United Kingdom has no expiration.

We intend to repatriate approximately \$30.0 million from Japan during 2011, and deferred U.S. income taxes of \$2.1 million (net of related foreign tax credits of \$12.9 million) have been included in the 2010 income tax expense. Other than this planned repatriation, undistributed earnings of foreign subsidiaries are considered to be permanently reinvested and accordingly, no provision for U.S. federal and state income taxes or foreign withholding taxes has been made. Unrepatriated earnings could become subject

Table of Contents**ADVANCED ENERGY INDUSTRIES, INC.****NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)**

to U.S. income taxes (subject to a reduction for foreign tax credits) and withholding taxes payable to the various foreign countries if they are remitted as dividends, are loaned to us, or if we sell our stock in the subsidiaries. The determination of the additional deferred taxes that have not been provided on undistributed earnings is not practicable.

The domestic and foreign component of our income (loss) before income taxes for the years ended December 31 was as follows (in thousands):

|          | <b>2010</b> | <b>2009</b> | <b>2008</b> |
|----------|-------------|-------------|-------------|
| Domestic | \$ 47,010   | \$ (66,273) | \$ (24,277) |
| Foreign  | 20,399      | (28,957)    | 32,415      |
|          | \$ 67,409   | \$ (95,230) | \$ 8,138    |

**Tax Contingencies**

We account for uncertain tax positions by applying a minimum recognition threshold to tax positions before recognizing these positions in the financial statements.

The reconciliation of our tax contingencies is as follows (in thousands):

|  | <b>2010</b> | <b>2009</b> | <b>2008</b> |
|--|-------------|-------------|-------------|
| Balance at beginning of period                                     | \$ 14,987   | \$ 13,468   | \$ 9,985    |
| Additions based on tax positions taken during a prior period       | 318         |             | 1,126       |
| Reductions based on tax positions taken during a prior period      | (21)        | (4,190)     |             |
| Additions based on tax positions taken during the current period   | 381         | 5,709       |             |
| Reductions based on tax positions taken during the current period  |             |             | 2,357       |
| Reductions related to settlement of tax matters                    |             |             |             |
| Reductions related to a lapse of applicable statute of limitations |             |             |             |
| Balance at end of period   | \$ 15,665   | \$ 14,987   | \$ 13,468   |

If the \$15.7 million of tax contingencies reverse, \$6.0 million will affect our effective tax rate. The tax years 2004 through 2010 remain open to examination by the United States and foreign taxing jurisdictions to which we are subject. In accordance with our accounting policy, we recognize accrued interest and penalties related to unrecognized tax benefits as a component of tax expense. We had an immaterial amount of accrued interest and penalties at December 31, 2010 and 2009. We do not anticipate a material change to the amount of unrecognized tax positions within the next 12 months.

While management believes it has adequately provided for all tax positions, amounts asserted by taxing authorities could materially differ from our accrued positions as a result of uncertain and complex application of tax regulations. Additionally, the recognition and measurement of certain tax benefits includes estimates and judgment by management and inherently includes subjectivity. Accordingly, additional provisions on federal and foreign tax-related matters could be recorded in the future as revised estimates are made or the underlying matters are settled or otherwise resolved.

**NOTE 4. EARNINGS PER SHARE**

Basic earnings per share ( EPS ) is computed by dividing income available to common stockholders by the weighted-average number of common shares outstanding during the period. The computation of diluted EPS is similar to the computation of basic EPS except that the numerator is increased to exclude charges which would not have been incurred, and the denominator is increased to include the number of additional

**Table of Contents****ADVANCED ENERGY INDUSTRIES, INC.****NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)**

common shares that would have been outstanding (using the if-converted and treasury stock methods), if securities containing potentially dilutive common shares (stock options and restricted stock units) had been converted to common shares, and if such assumed conversion is dilutive.

The following is a reconciliation of the weighted-average shares outstanding used in the calculation of basic and diluted earnings per share for the years ended December 31, 2010, 2009 and 2008:

|   | <b>Years Ended December 31,</b>              |              |             |
|---|--|--------------|-------------|
|   | <b>2010</b>                                  | <b>2009</b>  | <b>2008</b> |
|   | <b>(In thousands, except per share data)</b> |              |             |
| Net income (loss) from continuing operations, net of income taxes     | \$ 53,593                                    | \$ (101,812) | \$ (6,501)  |
| Basic weighted-average shares outstanding                             | 42,862                                       | 41,966       | 42,537      |
| Assumed exercise of dilutive stock options and restricted stock units | 557  |              |             |
| Diluted weighted-average shares outstanding                           | 43,419                                       | 41,966       | 42,537      |
| <br>Income from Continuing Operations:                                |  |              |             |
| Earnings (loss) per common share:                                     |  |              |             |
| Basic earnings (loss) per share                                       | \$ 1.25                                      | \$ (2.43)    | \$ (0.15)   |
| Diluted earnings (loss) per share                                     | \$ 1.23                                      | \$ (2.43)    | \$ (0.15)   |

As of December 31, 2010, stock options and restricted stock units of 6.2 million shares were outstanding, of which 3.6 million shares for the period were not included in the computation of diluted earnings per share because the exercise price exceeded the average price per share for the period.

As of December 31, 2009, stock options and restricted stock units of 5.2 million shares were outstanding. All potentially dilutive common shares were excluded from the computation as the effect of including the instruments in the computation would be anti-dilutive due to our net loss for the period.

As of December 31, 2008, stock options and restricted stock units of 4.3 million shares were outstanding. All potentially dilutive common shares were excluded from the computation as the effect of including the instruments in the computation would be anti-dilutive due to our net loss for the period.

**Stock Buyback**

In December 2007, our Board of Directors authorized a program to repurchase up to \$75.0 million of our common stock over a twelve month period. Under this program, in 2008, we repurchased and retired 3,775,000 shares of our common stock for a total of \$49.8 million. We suspended our stock repurchase program in April 2008.

All shares repurchased were executed in the open market and no shares were repurchased from related parties. Repurchased shares were retired and assumed the status of authorized and unissued shares.

**NOTE 5. MARKETABLE SECURITIES**

Our investments with original maturities of more than three months at time of purchase are considered marketable securities available for sale.

**Table of Contents****ADVANCED ENERGY INDUSTRIES, INC.****NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)**

The composition of our marketable securities is as follows:

|                         | <b>December 31, 2010</b> |                   | <b>December 31, 2009</b> |                   |
|-------------------------|--------------------------|-------------------|--------------------------|-------------------|
|                         | <b>Cost</b>              | <b>Fair Value</b> | <b>Cost</b>              | <b>Fair Value</b> |
|                         | <b>(In thousands)</b>    |                   |                          |                   |
| Commercial paper        | \$                       | \$                | \$ 3,996                 | \$ 3,996          |
| Treasury bills          |                          | 2,003             |                          | 2,006             |
| Certificates of deposit |                          | 3,126             |                          | 5,458             |
| Corporate bonds/notes   |                          | 1,002             |                          | 7,034             |
| Municipal bonds/notes   |                          |                   |                          | 6,423             |
| Agency bonds/notes      |                          | 3,503             |                          | 3,504             |
| Auction rate securities |                          |                   |                          | 21,650            |
| Put Agreement           |                          |                   |                          | 18,249            |
|                         |                          |                   |                          | 3,247             |
| Total securities        | \$                       | 9,634             | \$                       | 44,561            |
|                         |                          | \$ 9,640          |                          | \$ 44,401         |

The maturities of our marketable securities available for sale as of December 31, 2010 are as follows:

|                         | <b>Earliest</b> |    | <b>Latest</b> |
|-------------------------|-----------------|----|---------------|
| Treasury bills          | 5/31/2011       | to | 5/31/2011     |
| Certificates of deposit | 4/14/2011       | to | 12/10/2011    |
| Corporate bonds/notes   | 6/3/2011        | to | 6/3/2011      |
| Agency bonds            | 1/18/2011       | to | 4/18/2011     |

The value and liquidity of our marketable securities are affected by market conditions as well as the ability of the issuer to make principal and interest payments when due, and the functioning of the markets in which these securities are traded. Our current investments in marketable securities are expected to be liquidated during the next year.

During June 2010, we liquidated our auction rate securities ( ARS ) at face value and our non-transferrable Auction Rate Securities Rights Agreement (the Put Agreement ) expired on July 2, 2010 without exercise.

As of December 31, 2010, we do not believe any of the underlying issuers of our marketable securities are presently at risk of default.

**NOTE 6. ASSETS AND LIABILITIES MEASURED AT FAIR VALUE****Fair Value Hierarchy**

Financial assets and liabilities recorded at fair value in our Consolidated Balance Sheets are categorized based upon a fair value hierarchy established by U.S. GAAP, which prioritizes the inputs used to measure fair value into the



following levels:

- Level 1:* Quoted market prices in active markets for identical assets or liabilities at the measurement date.
- Level 2:* Quoted prices for similar assets or liabilities in active markets; quoted prices for identical or similar assets and liabilities in markets that are not active; or other inputs that are observable and can be corroborated by observable market data.

**Table of Contents****ADVANCED ENERGY INDUSTRIES, INC.****NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)**

*Level 3:* Inputs reflect management's best estimates and assumptions of what market participants would use in pricing the asset or liability at the measurement date. The inputs are unobservable in the market and significant to the valuation of the instruments.

A financial instrument's categorization within the valuation hierarchy is based upon the lowest level of input that is significant to the fair value measurement.

**Assets and Liabilities Measured at Fair Value on a Recurring Basis**

The following tables present information about our financial assets measured at fair value on a recurring basis as of December 31, 2010 and December 31, 2009, and indicate the fair value hierarchy of the valuation techniques utilized to determine such fair value. We did not have any financial liabilities measured at fair value on a recurring basis as of December 31, 2010 and December 31, 2009.

| <b>As of December 31, 2010:</b> | <b>Level 1</b>        | <b>Level 2</b> | <b>Level 3</b> | <b>Total</b> |
|---------------------------------|-----------------------|----------------|----------------|--------------|
|                                 | <b>(In thousands)</b> |                |                |              |
| Treasury bills                  | \$ 2,006              | \$             | \$             | \$ 2,006     |
| Certificates of deposit         | 3,126                 |                |                | 3,126        |
| Corporate bonds/notes           | 1,004                 |                |                | 1,004        |
| Agency bonds/notes              | 3,504                 |                |                | 3,504        |
| Total                           | \$ 9,640              | \$             | \$             | \$ 9,640     |

| <b>As of December 31, 2009:</b> | <b>Level 1</b>        | <b>Level 2</b> | <b>Level 3</b> | <b>Total</b> |
|---------------------------------|-----------------------|----------------|----------------|--------------|
|                                 | <b>(In thousands)</b> |                |                |              |
| Auction rate securities(1)      | \$                    | \$             | \$ 18,249      | \$ 18,249    |
| Put Agreement(1)                |                       |                | 3,247          | 3,247        |
| Certificates of deposit         | 5,458                 |                |                | 5,458        |
| Commercial paper                | 3,996                 |                |                | 3,996        |
| Municipal bonds                 | 6,423                 |                |                | 6,423        |
| Corporate bonds/notes           | 7,028                 |                |                | 7,028        |
| Total                           | \$ 22,905             | \$             | \$ 21,496      | \$ 44,401    |

(1) As of December 31, 2009, the fair value of our ARS and the Put Agreement were determined using Level 3 inputs. Some of the inputs into the discounted cash flow models we used were unobservable in the market and had a significant effect on the valuation. The assumptions used in preparing the models included, but were not limited to, periodic coupon rates, market required rates of return and the expected term of each security. The coupon rate was estimated using implied forward rate data on interest rate swaps and United States treasuries,

and limited where necessary by any contractual maximum rate paid under a scenario of continuing auction failures. We believe implied forward rates inherently account for a lack of liquidity. In making assumptions of the required rates of return, we considered risk-free interest rates and credit spreads for investments of similar credit quality. The expected term for the ARS was based on a weighted probability-based estimate of the time the principal would become available to us with and without exercising our Put Agreement. The expected term for the Put Agreement was based on the earliest date on which we could exercise our put.

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There were no transfers in and out of Level 1 and Level 2 fair value measurements during the year ended December 31, 2010. The following table presents the activity in Level 3 instruments during the years ended December 31, 2010 and 2009:

|   | <b>ARS</b> | <b>Put Agreement<br/>(In thousands)</b> | <b>Total</b> |
|---|------------|---|--------------|
| Balances at December 31, 2008                     | \$ 24,938  | \$ 5,459                                | \$ 30,397    |
| Net realized gain (loss) included in other income | 711        | (417)                                   | 294          |
| Purchases, sales, and settlements, net            | (7,400)    | (1,795)                                 | (9,195)      |
| Balances at December 31, 2009                     | 18,249     | 3,247                                   | 21,496       |
| Net realized gain (loss) included in other income | 3,401      | (3,247)                                 | 154          |
| Purchases, sales, and settlements, net            | (21,650)   |   | (21,650)     |
| Balances at December 31, 2010                     | \$         | \$                                      | \$           |

**NOTE 7. INVENTORIES**

Our inventories consisted of:

|                         | <b>2010</b>           | <b>December 31,<br/>2009</b> |
|-------------------------|-----------------------|------------------------------|
|                         | <b>(In thousands)</b> |                              |
| Parts and raw materials | \$ 53,755             | \$ 18,882                    |
| Work in process         | 5,594                 | 3,061                        |
| Finished goods          | 18,244                | 6,624                        |
|                         | \$ 77,593             | \$ 28,567                    |

**NOTE 8. PROPERTY AND EQUIPMENT**

Details of property and equipment are as follows:

| <b>2010</b>           | <b>December 31,<br/>2009</b> |
|-----------------------|------------------------------|
| <b>(In thousands)</b> |                              |

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|                                      |    |          |    |          |
|--------------------------------------|----|----------|----|----------|
| Buildings and land                   | \$ | 1,701    | \$ | 533      |
| Machinery and equipment              |    | 53,885   |    | 37,155   |
| Computer and communication equipment |    | 23,296   |    | 26,141   |
| Furniture and fixtures               |    | 5,717    |    | 3,661    |
| Vehicles                             |    | 541      |    | 490      |
| Leasehold improvements               |    | 28,003   |    | 20,641   |
| Construction in process              |    | 3,996    |    |          |
|                                      |    | 117,139  |    | 88,621   |
| Less: Accumulated depreciation       |    | (82,570) |    | (69,934) |
|                                      | \$ | 34,569   | \$ | 18,687   |

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Depreciation expense recorded in continuing operations for the years ended December 31, 2010, 2009 and 2008 and included in selling, general and administrative expense is as follows:

|                      | <b>Years Ended December 31,</b> |             |             |
|----------------------|---------------------------------|-------------|-------------|
|                      | <b>2010</b>                     | <b>2009</b> | <b>2008</b> |
|                      | <b>(In thousands)</b>           |             |             |
| Depreciation expense | \$ 7,226                        | \$ 7,818    | \$ 8,767    |

**NOTE 9. GOODWILL**

The following summarizes the changes in goodwill during the years ended December 31, 2010 and 2009:

|  | <b>December 31,</b>   |             |
|--|-----------------------|-------------|
|  | <b>2010</b>           | <b>2009</b> |
|  | <b>(In thousands)</b> |             |
| Gross carrying amount (including the effect of changes in exchange rates), beginning of period | \$                    | \$ 63,260   |
| Additions and adjustments  | 48,360                |             |
| Impairments  |                       | (63,260)    |
| Net carrying amount, end of period   | \$ 48,360             | \$          |

Additions during 2010 represent the difference between the purchase price paid and values assigned to identifiable assets acquired and liabilities assumed in purchase accounting, as described in Note 2 *Business Acquisition and Disposition*.

**NOTE 10. INTANGIBLE ASSETS**

Other intangible assets consisted of the following as of December 31, 2010:

|                                 | <b>Gross</b>   | <b>Accumulated</b>  | <b>Net Carrying</b> | <b>Weighted-</b>   |
|---------------------------------|--|---------------------|---------------------|--------------------|
|                                 | <b>Carrying</b>  | <b>Amortization</b> | <b>Amount</b>       | <b>Average</b>     |
|                                 | <b>Amount</b>  | <b>Amortization</b> | <b>Amount</b>       | <b>Useful Life</b> |
|                                 | <b>(In thousands, except weighted-average useful life)</b> |                     |                     |                    |
| <b>Amortizable intangibles:</b> |  |                     |                     |                    |
| Technology-based                | \$ 43,075  | \$ (2,270)          | \$ 40,805           | 7                  |
| Trademarks and other            | 8,210  | (594)               | 7,616               | 8                  |

|                               |    |        |    |         |    |        |
|-------------------------------|----|--------|----|---------|----|--------|
| Total amortizable intangibles | \$ | 51,285 | \$ | (2,864) | \$ | 48,421 |
|-------------------------------|----|--------|----|---------|----|--------|

Other intangible assets consisted of the following as of December 31, 2009:

|  | <b>Gross<br/>Carrying<br/>Amount</b> | <b>Effect of<br/>Changes in<br/>Exchange<br/>Rates</b> | <b>Accumulated<br/>Amortization</b> | <b>Net<br/>Carrying<br/>Amount</b> |
|--|--------------------------------------|--|-------------------------------------|------------------------------------|
| <b>(In thousands, except weighted-average useful life)</b> |                                      |  |                                     |                                    |
| <b>Amortizable intangibles:</b>                            |                                      |  |                                     |                                    |
| Technology-based   | \$ 7,015                             | \$ 1,544   | \$ (8,559)                          | \$                                 |

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**Table of Contents****ADVANCED ENERGY INDUSTRIES, INC.****NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)**

Amortization expense related to intangible assets is as follows:

|                      | <b>Years Ended December 31,</b> |             |             |
|----------------------|---------------------------------|-------------|-------------|
|                      | <b>2010</b>                     | <b>2009</b> | <b>2008</b> |
|                      | <b>(In thousands)</b>           |             |             |
| Amortization expense | \$ 2,864                        | \$ 122      | \$ 462      |

Estimated amortization expense related to amortizable intangibles based on estimates of when in-process research and development is anticipated to move into production for each of the five years 2011 through 2015 and thereafter is as follows:

| <b>Year Ending December 31,</b> | <b>(In thousands)</b> |        |
|---------------------------------|-----------------------|--------|
| 2011                            | \$                    | 3,683  |
| 2012                            |                       | 6,489  |
| 2013                            |                       | 8,464  |
| 2014                            |                       | 9,181  |
| 2015                            |                       | 8,655  |
| Thereafter                      |                       | 11,949 |
|                                 | \$                    | 48,421 |

**NOTE 11. WARRANTIES**

Provisions of our sales agreements include product warranties customary to these types of agreements, ranging from 18 months to 10 years following installation. The provision for the estimated cost of warranties is recorded when revenue is recognized. The warranty provision is based on historical experience by product, configuration and geographic region. Accruals are established for warranty issues that are probable to result in future costs. Changes in accrued product warranties, including those acquired in the PV Powered transaction are as follows:

|  | <b>Years Ended December 31,</b> |             |             |
|--|---------------------------------|-------------|-------------|
|  | <b>2010</b>                     | <b>2009</b> | <b>2008</b> |
|  | <b>(In thousands)</b>           |             |             |
| Balance at beginning of period                           | \$ 7,005                        | \$ 6,005    | \$ 8,182    |
| Warranty liabilities acquired                            | 2,625                           |             |             |
| Increases to accruals related to sales during the period | 10,463                          | 7,143       | 10,317      |
| Warranty expenditures                                    | (7,144)                         | (6,143)     | (12,494)    |



|                          |    |        |    |       |    |       |
|--------------------------|----|--------|----|-------|----|-------|
| Balance at end of period | \$ | 12,949 | \$ | 7,005 | \$ | 6,005 |
|--------------------------|----|--------|----|-------|----|-------|

**NOTE 12. STOCK-BASED COMPENSATION**

As of December 31, 2010, we had two active stock-based incentive compensation plans; the 2008 Omnibus Incentive Plan and the Employee Stock Purchase Plan ( ESPP ). All new equity compensation grants are issued under these two plans; however, outstanding awards previously issued under inactive plans will continue to vest and remain exercisable in accordance with the terms of the respective plans. At December 31, 2010, there were 10.5 million shares reserved and 4.4 million shares available for future grant under our stock-based incentive plans.

**Table of Contents****ADVANCED ENERGY INDUSTRIES, INC.****NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)**

**2008 OMNIBUS INCENTIVE PLAN** The 2008 Omnibus Incentive Plan (the Plan ) provides officers, directors, key employees and other persons an opportunity to acquire or increase a direct proprietary interest in our operations and future success. Our Board of Directors currently administers the Plan, and makes all decisions concerning which officers, directors, employees and other persons are granted awards, how many to grant to each recipient, when awards are granted, how the Plan should be interpreted, whether to amend or terminate the Plan and whether to delegate administration of the Plan to a committee. In May 2010, our shareholders approved an increase from 3,500,000 to 7,500,000 shares authorized for issuance under the Plan. The Plan provides for the grant of stock options, stock appreciation rights, restricted stock, stock units (including deferred stock units), unrestricted stock and dividend equivalent rights. Any of the awards may be made as performance incentives to reward attainment of annual or long-term performance goals in accordance with the terms of the Plan. Stock options granted under the Plan may be non-qualified stock options or incentive stock options except that stock options granted to outside directors, consultants or advisers providing services to us shall in all cases be non-qualified stock options. The Plan will terminate on May 7, 2018 unless the administrator terminates the Plan earlier. As of December 31, 2010, 3,838,589 shares of common stock were available for grant under the Plan.

*Stock-based Compensation Expense*

Non-cash stock-based compensation expense is primarily included in general and administrative expense and was \$8.5 million, \$5.8 million and \$5.1 million for the years ending December 31, 2010, 2009 and 2008, respectively.

Our stock-based compensation expense is based on the value of the portion of share-based payment awards that are ultimately expected to vest, assuming estimated forfeitures at the time of grant. Estimated forfeiture rates for our stock-based compensation expense applicable to options and RSUs was approximately 12% for each of the years ended December 31, 2010, 2009 and 2008.

*Stock Options*

Stock option awards are generally granted with an exercise price equal to the market price of our stock at the date of grant and with a four-year vesting schedule and a term of 10 years.

The fair value of options granted during the years ended December 31, 2010, 2009 and 2008 was estimated on the date of grant using the Black-Scholes-Merton option-pricing model using the following assumptions by grant year:

|  | <b>2010</b> | <b>2009</b> | <b>2008</b> |
|--|-------------|-------------|-------------|
| <b>Fair value assumptions stock options:</b> |             |             |             |
| Risk-free interest rates                     | 1.3% - 2.6% | 1.9% - 2.4% | 2.8% - 3.4% |
| Expected dividend yield rates                | 0.0%        | 0.0%        | 0.0%        |
| Expected term                                | 5.8 years   | 5.5 years   | 5.5 years   |
| Expected volatility                          | 63.0%       | 63.5%       | 61.9%       |

The risk free interest rate is based on the five-year U.S. Treasury Bill at the time of the grant. Historical company information is the primary basis for selection of the expected dividend yield. The expected term is based on historical experience. Expected volatility is based on historical volatility of our common stock using daily stock price observations.



**Table of Contents****ADVANCED ENERGY INDUSTRIES, INC.****NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)**

The weighted-average fair value of options issued and total intrinsic value of options exercised were:

|   | <b>2010</b>                                | <b>2009</b> | <b>2008</b> |
|---|--|-------------|-------------|
|   | <b>(In thousands, except share prices)</b> |             |             |
| Weighted-average grant date fair value of options | \$ 8.71                                    | \$ 5.84     | \$ 6.98     |
| Total intrinsic value of options exercised        | \$ 979                                     | \$ 113      | \$ 989      |

Changes in outstanding stock options during the year ended December 31, 2010 were as follows:

|  | <b>Shares</b>                              |    | <b>Weighted-Average Exercise Price</b> |
|--|--|----|--|
|  | <b>(In thousands, except share prices)</b> |    |  |
| <b>Changes in outstanding stock options:</b> |  |    |  |
| Options outstanding at December 31, 2009     | 4,826                                      | \$ | 15.05                                  |
| Options granted                              | 1,419                                      |    | 15.06                                  |
| Options exercised                            | (166)                                      |    | 10.45                                  |
| Options forfeited                            | (241)                                      |    | 12.17                                  |
| Options expired                              | (129)                                      |    | 41.32                                  |
| Options outstanding at December 31, 2010     | 5,709                                      |    | 14.72                                  |

As of December 31, 2010, there was \$11.7 million of total unrecognized compensation cost related to stock options granted and outstanding, net of expected forfeitures related to non-vested options, which is expected to be recognized through fiscal year 2014, with a weighted-average remaining vesting period of 2.5 years. Information about our stock options that are outstanding, options that we expect to vest and options that are exercisable at December 31, 2010 follows:

|                          | <b>Number</b>  | <b>Weighted-Average Exercise Price</b> | <b>Weighted-Average Remaining Contractual Life</b> | <b>Aggregate Intrinsic Value</b> |
|--------------------------|--|--|--|----------------------------------|
|                          | <b>(In thousands, except share prices and lives)</b> |  |  |                                  |
| Options outstanding      | 5,709  | \$ 14.72                               | 6.8 years  | \$ 8,431                         |
| Options expected to vest | 5,200  | 14.86                                  | 6.6 years  | 7,787                            |
| Options exercisable      | 2,765  | 16.47                                  | 4.8 years  | 4,042                            |



**Table of Contents****ADVANCED ENERGY INDUSTRIES, INC.****NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)**

The following table summarizes information about the stock options outstanding at December 31, 2010:

| Range of Exercise Prices | Number Outstanding | Options Outstanding                           |                                 | Options Exercisable |                                 |
|--------------------------|--------------------|---|---------------------------------|---------------------|---------------------------------|
|                          |                    | Weighted-Average Remaining Contractual Life   | Weighted-Average Exercise Price | Number Exercisable  | Weighted-Average Exercise Price |
|                          |                    | (In thousands, except share prices and lives) |                                 |                     |                                 |
| \$7.15 to \$12.19        | 1,883              | 6.9 years                                     | \$ 9.33                         | 899                 | \$ 9.28                         |
| \$12.19 to \$15.65       | 2,089              | 8.3 years                                     | 14.14                           | 545                 | 13.85                           |
| \$15.66 to \$38.55       | 1,737              | 4.7 years                                     | 21.25                           | 1,321               | 22.45                           |
| \$7.15 to \$38.55        | 5,709              | 6.8 years                                     | 14.72                           | 2,765               | 16.47                           |

*Restricted Stock Units*

The fair value of our RSUs is determined based upon the closing fair market value of our common stock on the grant date. Changes in the unvested restricted stock units during the year ended December 31, 2010 were as follows:

|                              | Shares<br>(In thousands) |
|------------------------------|--------------------------|
| Balance at December 31, 2009 | 385                      |
| RSUs granted                 | 235                      |
| RSUs vested                  | (133)                    |
| RSUs forfeited               | (40)                     |
| Balance at December 31, 2010 | 447                      |

The weighted-average fair value of RSUs issued and total fair value of RSUs converted to shares were:

|  | 2010                                | 2009     | 2008     |
|--|-------------------------------------|----------|----------|
|  | (In thousands, except share prices) |          |          |
| Weighted-average grant date fair value of RSUs | \$ 14.79                            | \$ 9.76  | \$ 12.54 |
| Total fair value of RSUs converted to shares   | \$ 1,923                            | \$ 1,555 | \$ 1,793 |

As of December 31, 2010, there was \$2.5 million of total unrecognized compensation cost, net of expected forfeitures related to non-vested RSUs granted, which is expected to be recognized through fiscal 2014, with a weighted-average remaining vesting period of 2.5 years.

*Employee Stock Purchase Plan*

The ESPP, a stockholder-approved plan, provides for the issuance of rights to purchase up to 1,000,000 shares of common stock. In May 2010, shareholders approved an increase from 500,000 to 1,000,000 shares authorized for sale under our ESPP. Employees are eligible to participate in the ESPP if employed by us for at least 20 hours per week during at least five months per calendar year. Participating employees may contribute up to the lesser of 5% of their eligible earnings or \$1,250 during each plan period. Currently, the plan period is six months. The purchase price of common stock purchased under the ESPP is currently equal to the lower of: 1) 85% of the fair market value of our common stock on the commencement

**Table of Contents****ADVANCED ENERGY INDUSTRIES, INC.****NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)**

date of each plan period or 2) 85% of the fair market value of our common shares on each plan period purchase date. At December 31, 2010, 516,244 shares remained available for future issuance under the ESPP.

Purchase rights granted under the ESPP are valued using the Black-Scholes-Merton model. As of December 31, 2010, there was an immaterial amount of total unrecognized compensation cost related to the ESPP that is expected to be recognized over a remaining period of four months. Total compensation expense was \$0.1 million for the years ended December 31, 2010 and 2008. No compensation expense was recognized in the year ended December 31, 2009 related to our ESPP.

The fair value of each purchase right granted under the ESPP was estimated on the date of grant using the Black-Scholes-Merton option pricing model with the following assumptions:

|                                     | <b>2010</b> | <b>2009</b> | <b>2008</b> |
|-------------------------------------|-------------|-------------|-------------|
| <b>Fair value assumptions ESPP:</b> |             |             |             |
| Risk-free interest rates            | 0.2% - 0.3% | 0.2% - 0.3% | 2.7% - 3.1% |
| Expected dividend yield rates       | 0.0%        | 0.0%        | 0.0%        |
| Expected term                       | 0.5 years   | 0.5 years   | 0.5 years   |
| Expected volatility                 | 62.8%       | 63.5%       | 61.9%       |

The risk free interest rate is based on the six month U.S. Treasury Bill at the time of the grant. Historical company information is the primary basis for selection of the expected dividend yield. The expected term is based on historical experience. Expected volatility is based on historical volatility of our common shares using daily stock price observations.

**NOTE 13. RETIREMENT PLANS**

We have a 401(k) profit sharing and retirement savings plan covering substantially all full-time U.S. employees. Participants may defer up to the maximum amount allowed as determined by law. Participants are immediately vested in their contributions. Profit sharing contributions to the plan, which are discretionary, are approved by the Board of Directors. Vesting in the profit sharing contribution account is based on years of service, with most participants fully vested after four years of credited service.

For the years ended December 31, 2010 and 2008, our contribution for participants in our 401(k) plan was 50% matching on contributions by employees up to 6% of the employee's compensation. There were no contributions made by us for participants in 2009.

During the years ended December 31, 2010, 2009, and 2008 we recognized total defined contribution benefit plan costs of \$0.7 million, \$0.0 million and \$1.3 million, respectively.



**Table of Contents****ADVANCED ENERGY INDUSTRIES, INC.****NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)****NOTE 14. ACCUMULATED OTHER COMPREHENSIVE INCOME**

Accumulated other comprehensive income consisted of the following (in thousands):

**Unrealized holding gain (loss) on available-for-sale securities:**

|   |    |     |
|---|----|-----|
| Balance at December 31, 2009  | \$ | (3) |
| Unrealized holding gain, net of realized amounts reclassified to net income |    | 9   |

|                              |  |   |
|------------------------------|--|---|
| Balance at December 31, 2010 |  | 6 |
|------------------------------|--|---|

**Accumulated foreign currency translation adjustments:**

|                              |  |        |
|------------------------------|--|--------|
| Balance at December 31, 2009 |  | 27,411 |
| Translation adjustments      |  | (343)  |

|                              |  |        |
|------------------------------|--|--------|
| Balance at December 31, 2010 |  | 27,068 |
|------------------------------|--|--------|

|  |    |        |
|--|----|--------|
| Total accumulated other comprehensive income | \$ | 27,074 |
|--|----|--------|

**NOTE 15. COMMITMENTS AND CONTINGENCIES****Disputes and Legal Actions**

We are involved in disputes and legal actions from time to time in the ordinary course of business.

During 2008, the Customs Office of Taipei, Taiwan issued a series of orders to our Taiwanese subsidiary, Advanced Energy Taiwan, Ltd., requiring that certain of our products manufactured in mainland China and allegedly imported without proper authorization be removed from Taiwan. We protested the orders based upon rulings of the Taiwan Bureau of Foreign Trade that the products were authorized for unrestricted import. We originally appealed to the Taiwan High Administrative Court which ruled against us in May 2009. We then appealed that decision to the Taiwan Supreme Administrative Court and it remains pending. We have previously recorded a charge of \$0.3 million as our best estimate of the amount we are likely to pay to resolve this matter. The maximum penalty related to this matter is \$2.3 million if the Customs Office determines that we have not complied with the removal orders. We believe the likelihood of the Customs Office determining that we have not complied with the removal orders to be remote.

**Operating Leases**

We have various operating leases for automobiles, equipment and office and production facilities. Rent expense under operating leases was approximately \$6.0 million in 2010, \$6.1 million in 2009 and \$6.1 million in 2008.

The future minimum rental payments required under non-cancelable operating leases as of December 31, 2010 are as follows (in thousands):

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|            |    |        |
|------------|----|--------|
| 2011       | \$ | 5,894  |
| 2012       |    | 5,423  |
| 2013       |    | 4,461  |
| 2014       |    | 3,414  |
| 2015       |    | 3,041  |
| Thereafter |    | 707    |
|            | \$ | 22,940 |

**Table of Contents****ADVANCED ENERGY INDUSTRIES, INC.****NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)****NOTE 16. RESTRUCTURING COSTS**

Throughout 2008 and during the first nine months of 2009, we implemented cost reduction efforts in response to deteriorating economic conditions and weakening demand from our end markets. During this timeframe, we reduced our global workforce by approximately 455 people, or 27% of total headcount, across all functional areas and geographies.

We completed our restructuring activities in 2009 and incurred restructuring costs of \$4.4 million in 2009 and \$3.5 million in 2008 for cumulative restructuring costs of \$7.9 million. These costs were primarily severance and benefits expenses related to reductions in workforce. As of December 31, 2009, we had no remaining obligations related to restructuring including severance and benefits payments.

The following table summarizes the components of our restructuring costs (in thousands):

|   |    |         |
|---|----|---------|
| Accrued restructuring costs December 31, 2007 | \$ | 36      |
| Total net restructuring charges during 2008   |    | 3,487   |
| Payments and other settlements during 2008    |    | (1,698) |
| Accrued restructuring costs December 31, 2008 |    | 1,825   |
| Total net restructuring charges during 2009   |    | 4,376   |
| Payments and other settlements during 2009    |    | (6,201) |
| Accrued restructuring costs December 31, 2009 | \$ |         |

**NOTE 17. OTHER INCOME, NET**

During 2010, we participated, through our wholly owned subsidiary PV Powered, in the Solar Energy Grid Integration System Program ( SEGIS ) sponsored by the Department of Energy and administered by Sandia National Labs. Our participation in the SEGIS program is performed in stages, and revenue, net of costs incurred, is recognized in other income, net, in our Consolidated Statements of Operations. We invoice SEGIS upon completion of certain milestones. Net revenues of \$1.2 million were recognized and recorded in Other income, net, as this project does not represent commercial product sales and we are not normally engaged in research and development type projects from which revenue is generated.

**NOTE 18. RELATED PARTY TRANSACTIONS**

We lease our executive offices and manufacturing facilities in Fort Collins, Colorado from a limited liability partnership in which Douglas Schatz, our Chairman of the Board and former Chief Executive Officer holds an interest. The leases relating to these spaces expire during 2015 and obligate us to total annual payments of approximately \$3.0 million which includes facilities rent and common area maintenance costs.

Related party rent and related expenses for the years ended December 31, 2010, 2009 and 2008 were \$2.8 million, \$2.9 million and \$3.1 million, respectively.

SITIZN Holdings, a German-based company, and its subsidiary Solayer are customers of Advanced Energy. Douglas S. Schatz, Chairman of the Board of Advanced Energy, holds a direct controlling equity interest in SITIZN and is a board member. Since January 1, 2010, SITIZN and Solayer have ordered approximately \$0.7 million of our power products and training services.

In November 2008, we reimbursed Mr. Schatz \$125,000 for a filing fee that he paid to the Federal Trade Commission in connection with notifications submitted by us and Mr. Schatz under the Hart-Scott-Rodino Antitrust Improvements Act of 1976. The notifications were required in connection with Mr. Schatz's acquisition of common stock upon the vesting of RSUs that had been granted to Mr. Schatz while he was serving as our Chief Executive Officer.

**Table of Contents****ADVANCED ENERGY INDUSTRIES, INC.****NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)****NOTE 19. GEOGRAPHIC AND SIGNIFICANT CUSTOMER INFORMATION**

The combination of PV Powered's solar inverter product line with our Solaron inverter product line resulted in revenue growth, both in absolute dollars and as a percentage of our overall revenue. Serving the inverter market has proven to require management, marketing, sales and engineering efforts that are uniquely different from those of our traditional thin-film capital equipment market. As a result, management has announced the creation of two focused business units within the Company effective January 1, 2011. The two business units, Thin Films Deposition Power Conversion and Thermal Instrumentation (Thin Films) and Renewable Power Inverters (Renewables), will enable improved execution and a strategic focus on two distinct markets.

Due to the structure of our internal organization, the design of our internal systems and the manner in which expenses were tracked and managed, we are unable to recast our financial statements by operating segment for 2010 and prior without significant cost and effort. Therefore, segment information based on the two new business units for 2008, 2009 and 2010 has not been reported as it is impracticable to do so.

Our chief operating decision-makers manage our business as a single operating segment, which includes the design, manufacture, sale and support of power conversion products that transform power into various usable forms. We have operations in the United States, Europe and Asia. Our disclosures about sales and long-lived assets by geographic area and information relating to major customers are presented below. Sales attributed to individual countries are based on the location of our sales office.

| Sales to external customers: | Years Ended December 31, |                |            |
|------------------------------|--------------------------|----------------|------------|
|                              | 2010                     | 2009           | 2008       |
|                              |                          | (In thousands) |            |
| United States                | \$ 270,606               | \$ 71,439      | \$ 122,474 |
| People's Republic of China   | 48,024                   | 11,372         | 19,646     |
| Other Asian countries        | 88,872                   | 55,081         | 94,934     |
| Asia                         | 136,896                  | 66,453         | 114,580    |
| Germany                      | 47,339                   | 19,949         | 42,657     |
| Other European Countries     | 4,573                    | 4,005          | 5,455      |
| Europe                       | 51,912                   | 23,954         | 48,112     |
| Total sales                  | \$ 459,414               | \$ 161,846     | \$ 285,166 |



Table of Contents**ADVANCED ENERGY INDUSTRIES, INC.****NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)**

|                            | <b>Years Ended December 31,</b> |             |             |
|----------------------------|---------------------------------|-------------|-------------|
|                            | <b>2010</b>                     | <b>2009</b> | <b>2008</b> |
| United States              | 58.9%                           | 44.1%       | 42.9%       |
| People's Republic of China | 10.5%                           | 7.0%        | 6.9%        |
| Other Asian countries      | 19.3%                           | 34.1%       | 33.3%       |
| Asia                       | 29.8%                           | 41.1%       | 40.2%       |
| Germany                    | 10.3%                           | 12.3%       | 15.0%       |
| Other European Countries   | 1.0%                            | 2.5%        | 1.9%        |
| Europe                     | 11.3%                           | 14.8%       | 16.9%       |
| Total sales                | 100.0%                          | 100.0%      | 100.0%      |

**\*Long-lived assets:**

|               | <b>2010</b>           | <b>2009</b> |
|---------------|-----------------------|-------------|
|               | <b>(In thousands)</b> |             |
| United States | \$ 123,707            | \$ 12,816   |
| Asia          | 7,226                 | 5,349       |
| Europe        | 417                   | 522         |
|               | \$ 131,350            | \$ 18,687   |

\* Long-lived assets include property and equipment, goodwill and other intangible assets.

Sales to Applied Materials Inc., our largest customer, were \$86.4 million or 18.8% of total sales for 2010, \$34.7 million, or 21.4% of total sales, for 2009 and \$62.2 million, or 21.8% of total sales for 2008. Our sales to Applied Materials include products used in semiconductor processing and solar, flat panel display and architectural glass applications. No other customer accounted for 10% or more of our sales during these periods.

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**ITEM 9. CHANGES IN AND DISAGREEMENTS WITH ACCOUNTANTS ON ACCOUNTING AND FINANCIAL DISCLOSURE**

None.

**ITEM 9A. CONTROLS AND PROCEDURES**

**Evaluation of Disclosure Controls and Procedures**

We have established disclosure controls and procedures, which are designed to ensure that information required to be disclosed in reports filed or submitted under the Securities Exchange Act of 1934 is recorded, processed, summarized, and reported, within the time periods specified in the Securities and Exchange Commission's rules and forms. These disclosure controls and procedures include, without limitation, controls and procedures designed to ensure that information required to be disclosed in the reports that we file or submit under the Act is accumulated and communicated to management, including our Principal Executive Officer (Hans Georg Betz, Chief Executive Officer and President) and Principal Financial Officer (Danny C. Herron, Executive Vice President & Chief Financial Officer), as appropriate, to allow timely decisions regarding required disclosures.

As of the end of the period covered by this report, we conducted an evaluation, with the participation of management, including our Chief Executive Officer and Chief Financial Officer, of the effectiveness of the design and operation of the disclosure controls and procedures pursuant to the Exchange Act Rule 13a-15(b). Based upon this evaluation, the Chief Executive Officer and Chief Financial Officer concluded that our disclosure controls and procedures were effective as of December 31, 2010. The conclusions of the Chief Executive Officer and Chief Financial Officer from this evaluation were communicated to the Audit Committee. We intend to continue to review and document our disclosure controls and procedures, including our internal controls and procedures for financial reporting, and may from time to time make changes aimed at enhancing their effectiveness and to ensure that our systems evolve with our business.

**Management's Report on Internal Control over Financial Reporting**

It is management's responsibility to establish and maintain adequate internal control over our financial reporting, which is a process designed under the supervision of our Chief Executive Officer and Chief Financial Officer and implemented by our Board of Directors, management and other personnel. Our internal control over financial reporting is designed to provide reasonable assurance concerning the reliability of our financial reporting and the preparation of our financial statements.

Management, with the participation of our Chief Executive Officer and Chief Financial Officer, evaluated the effectiveness of our internal control over financial reporting as of December 31, 2010, using the criteria described in *Internal Control-Integrated Framework* issued by the Committee of Sponsoring Organizations of the Treadway Commission. Based upon this evaluation, and considering the exclusion of the internal control over financial reporting of PV Powered from the assessment as described below, management concluded that our internal control over financial reporting was effective as of December 31, 2010.

As discussed in Note 2 *Business Acquisition and Disposition*, to our Consolidated Financial Statements, on May 3, 2010, we acquired PV Powered. The scope of our evaluation did not include specific processes or transactions unique to PV Powered since PV Powered has not been integrated into our internal control systems as of December 31, 2010. We are continuing the integration of PV Powered into our internal control systems and will include PV Powered's



specific processes and transactions in our fiscal year 2011 evaluation of the effectiveness of internal control over financial reporting. PV Powered's total assets accounted for 28.6% of our total assets at December 31, 2010. PV Powered accounted for 14.3% of our total net sales for the year ended December 31, 2010.

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Grant Thornton LLP, an independent registered public accounting firm, has audited our Consolidated Financial Statements included in this Form 10-K and, as part of the audit, has issued a report, included herein, on the effectiveness of our internal control over financial reporting as of December 31, 2010.

### **Changes in Internal Control over Financial Reporting**

There was no change in our internal control over financial reporting that occurred during the fourth quarter of 2010 that has materially affected, or is reasonably likely to materially affect, our internal control over financial reporting.

### **Limitations on Controls and Procedures**

Management has concluded that our disclosure controls and procedures and internal control over financial reporting provide reasonable assurance that the objectives of our control system are met. We do not expect, however, that our disclosure controls and procedures or internal control over financial reporting will prevent or detect all misstatements, errors and fraud, if any. All control systems, no matter how well designed and implemented, have inherent limitations; and no evaluation therefore can provide absolute assurance that every misstatement, error or instance of fraud, if any, or risk thereof, has been or will be prevented or detected. The occurrence of a misstatement, error or fraud, if any, would not necessarily require a conclusion that our controls and procedures are not effective.

### **ITEM 9B. OTHER INFORMATION**

None.

## **PART III**

In accordance with General Instruction G(3) of Form 10-K, certain information required by this Part III is incorporated by reference to the definitive proxy statement relating to our 2011 Annual Meeting of Stockholders (the 2011 Proxy Statement ), as set forth below. The 2011 Proxy Statement will be filed with the Securities and Exchange Commission within 120 days after the end of our fiscal year.

### **ITEM 10. DIRECTORS AND EXECUTIVE OFFICERS OF THE REGISTRANT**

The information set forth in the 2011 Proxy Statement under the headings Proposal No. 1/ Election of Directors-Nominees and Section 16(a) Beneficial Ownership Reporting Compliance is incorporated herein by reference. The information under the heading Executive Officers of the Registrant in Part I of this Form 10-K is also incorporated herein by reference.

### **ITEM 11. EXECUTIVE COMPENSATION**

The information set forth in the 2011 Proxy Statement under the headings Executive Compensation and Stock Performance Graph is incorporated herein by reference.

### **ITEM 12. SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT AND RELATED STOCKHOLDER MATTERS**

The information set forth in the 2011 Proxy Statement under the headings Common Stock Ownership by Management and Other Stockholders and Equity Compensation Plan Information is incorporated herein by reference.

### **ITEM 13. CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS**

The information is set forth in Note 18 *Related Party Transactions* to our Consolidated Financial Statements, and in the 2011 Proxy Statement under the caption *Certain Transactions with Management* is incorporated herein by reference.

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**ITEM 14. PRINCIPAL ACCOUNTANT FEES AND SERVICES**

The information set forth in the 2011 Proxy Statement under the caption Fees Billed by Independent Public Accountants is incorporated herein by reference.

**PART IV**

**ITEM 15. EXHIBITS, FINANCIAL STATEMENT SCHEDULES**

(A) Documents filed as part of this Annual Report on Form 10-K are as follows:

1. Financial Statements:

Reports of Grant Thornton LLP

Consolidated Financial Statements:

Balance Sheets at December 31, 2010 and 2009

Statements of Operations for each of the three years in the period ended December 31, 2010

Statements of Stockholders Equity for each of the three years in the period ended December 31, 2010

Statements of Cash Flows for each of the three years in the period ended December 31, 2010

Notes to Consolidated Financial Statements

2. Financial Statement Schedules for each of the three years in the period ended December 31, 2010

**NOTE:** All schedules have been omitted because they are either not required or the information is included in the financial statements and notes thereto.

(B) Exhibits:

3.1 Restated Certificate of Incorporation, as amended.(1)

3.2 By-laws.(2)

3.3 Amendment to Bylaws.(3)

3.4 Second Amendment to the By-laws of Advanced Energy Industries, Inc.(24)

3.5 Third Amendment to the By-Laws of Advanced Energy Industries, Inc.(28)

4.1 Form of Specimen Certificate for Common Stock.(2)

- 10.1 Lease, dated June 12, 1984, amended June 11, 1992, by and between Prospect Park East Partnership and Advanced Energy Industries, Inc., for property located in Fort Collins, Colorado.(2)
- 10.2 Lease, dated March 14, 1994, as amended, by and between Sharp Point Properties, L.L.C., and Advanced Energy Industries, Inc., for property located in Fort Collins, Colorado.(2)
- 10.3 Lease, dated May 19, 1995, by and between Sharp Point Properties, L.L.C. and Advanced Energy Industries, Inc., for a building located in Fort Collins, Colorado.(2)
- 10.4 Lease dated March 20, 2000, by and between Sharp Point Properties, L.L.C. and Advanced Energy Industries, Inc., for a building located in Fort Collins, Colorado.(5)
- 10.5 Lease Amendment, dated as of April 26, 2010 by and between Sharp Point Properties, LLC and Advanced Energy Industries, Inc., for a building located in Fort Collins, Colorado.(29)
- 10.6 Lease Amendment, dated as of August 19, 2010, by and between Sharp Point Properties, LLC and Advanced Energy Industries, Inc., for a building located in Fort Collins, Colorado.(33)
- 10.7 Lease dated January 16, 2003, by and between China Great Wall Computer Shenzhen Co., Ltd., Great Wall Limited and Advanced Energy Industries (Shenzhen) Co., Ltd., for a building located in Shenzhen, China.(6)

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- 10.8 Form of Indemnification Agreement.(2)
- 10.9 1995 Stock Option Plan, as amended and restated through February 7, 2001.(7)\*
- 10.10 1995 Non-Employee Directors Stock Option Plan, as amended and restated through February 7, 2001.(7)\*
- 10.11 2001 Employee Stock Option Plan.(1)\*
- 10.12 2002 Employee Stock Option Plan.(1)\*
- 10.13 2003 Stock Option Plan.(1)\*
- 10.14 Amendment No. 1 to 2003 Stock Option Plan, dated January 31, 2005.(8)\*
- 10.15 Form of Stock Option Agreement pursuant to the 2003 Stock Option Plan.(8)\*
- 10.16 Amended and Restated 2003 Employees Stock Option Plan.(4)\*
- 10.17 2003 Non-Employee Directors Stock Option Plan.(1)\*
- 10.18 2003 Non-Employee Directors Stock Option Plan, as amended and restated.(4)\*
- 10.19 Form of Restricted Stock Unit Award Agreement pursuant to the 2003 Non-Employee Directors Stock Option Plan, as amended and restated as of February 15, 2006.(9)\*
- 10.20 Form of Restricted Stock Unit Agreement pursuant to the 2003 Non-Employee Directors Stock Option Plan.(10)\*
- 10.21 Restricted Stock Unit Agreement pursuant to the 2003 Stock Option Plan.(11)\*
- 10.22 Non-employee Director Compensation summary.(12)\*
- 10.23 Executive Change in Control Severance Agreement.(13)
- 10.24 Retirement Term Sheet relating to Douglas S. Schatz.(14)
- 10.25 Offer Letter to Hans-Georg Betz dated June 30, 2005.(15)
- 10.26 Offer letter, dated August 14, 2010, by and among Advanced Energy Industries, Inc. and Danny C. Herron.(31)
- 10.27 Executive Change in Control Severance Agreement dated June 30, 2005 by and between Advanced Energy Industries, Inc. and Hans-Georg Betz.(15)
- 10.28 Executive Change in Control Agreement, dated March 29, 2008, by and among Advanced Energy Industries, Inc. and Hans Georg Betz.(19)

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- 10.29 Executive Change in Control Agreement, dated March 29, 2008, by and among Advanced Energy Industries, Inc. and Lawrence D. Firestone.(19)
- 10.30 Executive Change in Control Agreement, dated March 29, 2008, by and among Advanced Energy Industries, Inc. and Yuval Wasserman.(19)
- 10.31 Executive Change in Control Agreement, dated August 14, 2010, by and among Advanced Energy Industries Inc. and Danny C. Herron.(32)
- 10.32 Master Executive Separation Agreement, dated August 11, 2010, by and among Advanced Energy Industries, Inc. and Lawrence D. Firestone.(31)
- 10.33 Global Supply Agreement by and between Advanced Energy Industries, Inc. and Applied Materials Inc. dated August 29, 2005.(16)+
- 10.34 Shipping Amendment to the Global Supply Agreement by and between Advanced Energy Industries, Inc. and Applied Materials Inc. dated August 29, 2005. (16)+
- 10.35 Non-Employee Director Compensation Structure.(17)\*
- 10.36 Leadership Corporate Incentive Plan.(35)\*
- 10.37 2008 Omnibus Incentive Plan, as amended May 4, 2010.

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- 10.38 Auction Rate Securities Rights Agreement dated October 8, 2008 by and between Advanced Energy Industries, Inc. and UBS Financial Services, Inc.(22)
- 10.39 Credit Line Account Application and Agreement for Organizations and Businesses, executed by Advanced Energy Industries, Inc. on April 30, 2009, by and between Advanced Energy Industries, Inc. and UBS Bank USA.(23)
- 10.40 Addendum to Credit Line Account Application and Agreement, executed by Advanced Energy Industries, Inc. on April 30, 2009, by and among Advanced Energy Industries, Inc., UBS Bank USA and UBS Financial Services Inc.(23)
- 10.41 Addendum to Credit Line Agreement, executed by Advanced Energy Industries, Inc. on April 30, 2009, by and between Advanced Energy Industries, Inc. and UBS Bank USA.(23)
- 10.42 Important Notice on Interest Rates and Payments, executed by Advanced Energy Industries, Inc. on April 30, 2009, by and between Advanced Energy Industries, Inc. and UBS Bank USA.(23)
- 10.43 Form of Director Indemnification Agreement.(24)
- 10.44 Agreement and Plan of Merger by and among Advanced Energy Industries, Inc., PV Powered, Inc. and Neptune Acquisition Sub, Inc., dated as of March 24, 2010.(25)
- 10.45 Amendment No. 1 to Agreement and Plan of Merger by and among Advanced Energy Industries, Inc., PV Powered, Inc. and Neptune Acquisition Sub, Inc., dated as of April 21, 2010.(26)
- 10.46 Amendment No. 2 to Merger Agreement by and among Advanced Energy Industries, Inc., PV Powered, Inc. and Neptune Acquisition Sub, Inc., dated as of October 30, 2010.(34)
- 10.47 Advisory Agreement by and between Advanced Energy Industries, Inc. and Elwood Spedden, dated as of May 3, 2010.(27)
- 10.48 Asset Purchase Agreement, dated as of July 21, 2010, by and among Advanced Energy Industries, Inc. and Hitachi Metals, Ltd.(30)
- 10.49 Amendment to Asset Purchase Agreement by and between Advanced Energy Industries, Inc. and Hitachi Metals, Ltd., dated as of October 15, 2010.(31)
- 14.1 Code of Ethical Conduct, as revised.(18)
- 21.1 Subsidiaries of Advanced Energy Industries, Inc.
- 23.1 Consent of Grant Thornton LLP, Independent Registered Public Accounting Firm.
- 31.1 Certification of the Chief Executive Officer Pursuant to Rule 13a-14(a) under the Securities Exchange Act of 1934, as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
- 31.2



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Certification of the Principal Financial Officer Pursuant to Rule 13a-14(a) under the Securities Exchange Act of 1934, as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.

32.1 Certification of the Chief Executive Officer Pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.

32.2 Certification of the Chief Financial Officer Pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002

- (1) Incorporated by reference to the Registrant's Quarterly Report on Form 10-Q for the quarter ended September 30, 2003 (File No. 000-26966), filed November 4, 2003.
- (2) Incorporated by reference to the Registrant's Registration Statement on Form S-1 (File No. 33-97188), filed September 2, 1995, as amended.
- (3) Incorporated by reference to the Registrant's Current Report on Form 8-K (File No. 000-26966), filed December 5, 2007.
- (4) Incorporated by reference to the Registrant's Quarterly Report on Form 10-Q for the quarter ended June 30, 2007 (File No. 000-26966), filed August 3, 2007.

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- (5) Incorporated by reference to the Registrant's Annual Report on Form 10-K for the year ended December 31, 2000 (File No. 000-26966), filed March 27, 2001.
- (6) Incorporated by reference to the Registrant's Annual Report on Form 10-K for the year ended December 31, 2003 (File No. 000-26966), filed February 24, 2004.
- (7) Incorporated by reference to the Registrant's Quarterly Report on Form 10-Q for the quarter ended March 31, 2001 (File No. 000-26966), filed May 9, 2001.
- (8) Incorporated by reference to the Registrant's Current Report on Form 8-K (File No. 000-26966), filed February 3, 2005.
- (9) Incorporated by reference to the Registrant's Current Report on Form 8-K (File No. 000-26966), filed May 31, 2006.
- (10) Incorporated by reference to the Registrant's Quarterly Report on Form 10-Q for the quarter ended June 30, 2006 (File No. 000-26966), filed August 9, 2006.
- (11) Incorporated by reference to the Registrant's Annual Report on Form 10-K for the year ended December 31, 2005 (File No. 000-26966), filed March 28, 2006.
- (12) Incorporated by reference to the Registrant's Current Report on Form 8-K (File No. 000-26966), filed February 1, 2006.
- (13) Incorporated by reference to the Registrant's Annual Report on Form 10-K (File No. 000-26966), filed March 31, 2005.
- (14) Incorporated by reference to the Registrant's Current Report on Form 8-K (File No. 000-26966), filed August 9, 2005.
- (15) Incorporated by reference to the Registrant's Current Report on Form 8-K (File No. 000-26966), filed July 6, 2005.
- (16) Incorporated by reference to the Registrant's Quarterly Report on Form 10-Q for the quarter ended September 30, 2005 (File No. 000-26966), filed November 7, 2005.
- (17) Incorporated by reference to the Registrant's Current Report on Form 8-K (File No. 000-26966), filed July 28, 2006.
- (18) Incorporated by reference to the Registrant's Current Report on Form 8-K (File No. 000-26966), filed May 1, 2007.
- (19) Incorporated by reference to the Registrant's Current Report on Form 8-K (File No. 000-26966), filed April 4, 2008.
- (20) Reserved.
- (21) Reserved.

- (22) Incorporated by reference to the Registrant's Annual Report on Form 10-K for the year ended December 31, 2008 (File No. 000-26966), filed February 27, 2009.
- (23) Incorporated by reference to the Registrant's Current Report on Form 8-K (File No. 000-26966), filed June 5, 2009.
- (24) Incorporated by reference to the Registrant's Current Report on Form 8-K (File No. 000-26966), filed December 14, 2009.
- (25) Incorporated by reference to the Registrant's Current Report on Form 8-K (File No. 000-26966), filed March 24, 2010.
- (26) Incorporated by reference to the Registrant's Current Report on Form 8-K (File No. 000-26966), filed April 22, 2010.
- (27) Incorporated by reference to the Registrant's Current Report on Form 10-Q (File No. 000-26966), filed May 6, 2010.
- (28) Incorporated by reference to the Registrant's Current Report on Form 8-K (File No. 000-26966), filed April 23, 2010.

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- (29) Incorporated by reference to the Registrant's Current Report on Form 8-K (File No. 000-26966), filed May 7, 2010.
- (30) Incorporated by reference to the Registrant's Current Report on Form 8-K (File No. 000-26966), filed July 22, 2010.
- (31) Incorporated by reference to the Registrant's Current Report on Form 10-Q (File No. 000-26966), filed November 5, 2010.
- (32) Incorporated by reference to the Registrant's Current Report on Form 8-K (File No. 000-26966), filed August 16, 2010.
- (33) Incorporated by reference to the Registrant's Current Report on Form 8-K (File No. 000-26966), filed August 20, 2010.
- (34) Incorporated by reference to the Registrant's Current Report on Form 8-K (File No. 000-26966), filed November 2, 2010.
- (35) Incorporated by reference to the Registrant's Annual Report on Form 10-K (File No. 000-26966), filed February 26, 2010.

\* Compensation Plan

+ Confidential treatment has been granted for portions of this agreement.

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**SIGNATURES**

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, the registrant has duly caused this Annual Report on Form 10-K to be signed on its behalf by the undersigned, thereunto duly authorized.

ADVANCED ENERGY INDUSTRIES, INC.  
(Registrant)

/s/ Hans Georg Betz  
Hans Georg Betz  
Chief Executive Officer

Date: March 2, 2011

Pursuant to the requirements of the Securities Exchange Act of 1934, this Annual Report has been signed below by the following persons on behalf of the registrant and in the capacities and on the dates indicated.

| <b>Signatures</b>                          | <b>Title</b>   | <b>Date</b>   |
|--|--|---------------|
| /s/ Hans Georg Betz<br>Hans Georg Betz     | Chief Executive Officer and Director                 | March 2, 2011 |
| /s/ Danny C. Herron<br>Danny C. Herron     | Executive Vice President and Chief Financial Officer | March 2, 2011 |
| /s/ Douglas S. Schatz<br>Douglas S. Schatz | Chairman of the Board                                | March 2, 2011 |
| /s/ Frederick A. Ball<br>Frederick A. Ball | Director   | March 2, 2011 |
| /s/ Richard P. Beck<br>Richard P. Beck     | Director   | March 2, 2011 |
| /s/ Trung T. Doan<br>Trung T. Doan         | Director   | March 2, 2011 |
| /s/ Edward C. Grady<br>Edward C. Grady     | Director   | March 2, 2011 |

Edward C. Grady

/s/ Terry Hudgens

Director

March 2, 2011

Terry Hudgens

/s/ Thomas M. Rohrs

Director

March 2, 2011

Thomas M. Rohrs