

The background of the top half of the cover is a close-up, angled view of a blue microchip, showing its intricate grid of circuitry.

# 2011



# ANNUAL REPORT

ANNUAL  
REPORT  
*2011*





***Dear Stockholders,***

Less than a year into my tenure at Advanced Energy, I see a company with many of the crucial components for future success. With 30 years of focus on power conversion and control, the company's innovative technology is among the best in the industry. Together with its world-class manufacturing facility, the company's power supplies are being used to propel next-generation designs. The commitment to precision, high quality products and extremely fast and reliable service worldwide has made Advanced Energy a leading supplier to a variety of industries, and in particular, the demanding semiconductor market. These assets have also ideally positioned Advanced Energy within - one of the fastest growing solar inverter markets - the U.S.

We now need to take the company to the next level - so that Advanced Energy's power supplies are known worldwide as the leading, dependable technology solutions in all of our markets. First, it is essential that we get closer to our customers, increase the potential applications for our Thin Film power products and expand the geographical markets for our Solar Energy products. Next, we must manage the cycles of our Thin Films business such that we can achieve more leverage at the peaks and better withstand the troughs of capital investment cycles, ultimately improving profitability. Additionally, in our Solar Energy business, we need to create a more profitable operating model while confronting an increasingly competitive environment. Finally, we must utilize our cash more effectively in order to accelerate profitable revenue growth and return value to our stockholders. These goals make up the key components of our three-year strategic plan - i) margin improvement, ii) revenue growth and iii) cash utilization. With bold financial aspirations, we have set the stage to transform Advanced Energy.

Beginning with the new short-term and long-term compensation plans that we put in place last quarter, our goal is to target consistent, long-term, profitable revenue growth and cash generation. The long-term compensation plan should reduce dilution from 4% to 1.5% and both plans should positively impact our profitability over the

next few years. Redesigned to better align the interests of our stockholders with the interests of our leadership team and reinforce the pay-for-performance structure, the plans reiterate the importance of long-term incentives in achieving our objectives and attracting, motivating and retaining key talent. To this end, we are also implementing extensive employee training programs as we transition our culture to one more focused on growth and profitability.

Next, the alignment of manufacturing and engineering should position us to more efficiently use our resources and locate them closer to our customers. In leveraging and centralizing our world-class manufacturing in China, our goal is to lower our product cost, enable local sourcing and further outsource to low-cost regions. By creating local R&D teams such as the one established last quarter in San Jose, California, we aim not only to reduce our time to market, but also to increase our responsiveness and better anticipate customer needs. We plan to open a similar location in South Korea in 2012. A recent example of Advanced Energy's commitment to its customers was its recognition by Oerlikon as the "2011 Supplier Award for On-Time Delivery." Our global team worked closely with Oerlikon to meet its high volume demand. From February through October 2011, we achieved 100% on-time delivery with Oerlikon, exemplifying the success of our global operations and the investment we have made in building strong customer relationships.

Additionally, we plan to actively explore new avenues of organic and inorganic growth to accelerate revenues and increase earnings per share. In the Thin Films business, we have plans to develop new applications and broaden the use of existing applications for adjacent markets. In the Solar Energy business, we further plan to extend our target markets to include a number of emerging geographies with our growing product line.

We aim to utilize our cash in the most effective way possible to accelerate these expansion efforts. When not otherwise deployed, we will return cash to our stockholders through the \$75 million share repurchase plan that we announced at the end of November. As of the end of February, we had repurchased approximately 3.3 million shares of stock for an aggregate price of \$35.3 million.

Ultimately, we are striving to reduce the breakeven point of both of our business units and to operate more profitably regardless of cycle or market stage. Two quarters into our restructuring plan, I am pleased to report that we have achieved annual cost savings of approximately \$26 million as of March 20, 2012 and we are putting the necessary measures in place so that these costs do not return. With many of the obvious cost reductions behind us and a keener focus on costs, we now move on to the more difficult task of improving manufacturing costs and gross margins and creating a more customer-focused organization. We have taken a number of actions that collectively should enable the company to more efficiently use its resources, manage the cyclicity of its markets, promote greater profitability in each business unit and offer greater transparency to investors.

Looking back, 2011 marked the beginning of a transformation at Advanced Energy. Though our markets face a number of challenges in 2012 – from cyclical lows in thin films markets, to competition in emerging solar inverter markets – we plan to apply the same financial discipline that we have instituted in our business in the last several months to build upon our technology and lead the charge into new markets, while focusing on long-term profitable growth and returning value to our stockholders over the next few years. With these steps, I believe Advanced Energy has a bright future and a unique opportunity to advance its leading position in the power conversion markets. I look forward to reporting on our progress in the year ahead.



Garry Rogerson

Chief Executive Officer

**Special Note Regarding Forward-Looking Statements** This Letter to Stockholders includes "forward-looking statements" within the meanings of Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended. All statements contained in this Letter to Stockholders 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. 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 of the Annual Report on Form 10-K of Advanced Energy Industries, Inc. for its year ended December 31, 2011. 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.





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

**FORM 10-K**

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☒ **ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934.**  
**For the fiscal year ended December 31, 2011**

or

☐ **TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934.**  
**For the transition period from \_\_\_\_\_ to \_\_\_\_\_.**

Commission file number: 000-26966

**ADVANCED ENERGY INDUSTRIES, INC.**

(Exact name of registrant as specified in its charter)

Delaware

84-0846841

(State or other jurisdiction of incorporation or organization)

(I.R.S. Employer Identification No.)

**1625 Sharp Point Drive, Fort Collins, CO**

**80525**

(Address of principal executive offices)

(Zip Code)

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

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

Title of each class

Name of each exchange on which registered

**Common Stock, \$0.001 par value**

**NASDAQ Global Select Market**

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 ☐ Accelerated filer ☒

Non-accelerated filer ☐

Smaller reporting company ☐

(Do not check if a smaller reporting company)

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 \$594,229,277 as of June 30, 2011, 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.

40,320,697

(Number of shares of Common Stock outstanding as of February 28, 2012)

**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 2012 Annual Meeting of Stockholders, scheduled to be held on May 2, 2012. 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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**ADVANCED ENERGY INDUSTRIES, INC.**  
**FORM 10-K**  
**TABLE OF CONTENTS**

	<u>Page</u>
<b>PART I</b>	<b>3</b>
<b>ITEM 1. BUSINESS</b>	<b>3</b>
<b>ITEM 1A. RISK FACTORS</b>	<b>10</b>
<b>ITEM 1B. UNRESOLVED STAFF COMMENTS</b>	<b>20</b>
<b>ITEM 2. PROPERTIES</b>	<b>21</b>
<b>ITEM 3. LEGAL PROCEEDINGS</b>	<b>21</b>
<b>ITEM 4. REMOVED AND RESERVED</b>	<b>21</b>
<b>PART II</b>	<b>22</b>
<b>ITEM 5. MARKET FOR REGISTRANT’S COMMON EQUITY, RELATED STOCKHOLDER MATTERS AND ISSUER PURCHASES OF EQUITY SECURITIES</b>	<b>22</b>
<b>ITEM 6. SELECTED FINANCIAL DATA</b>	<b>24</b>
<b>ITEM 7. MANAGEMENT’S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS</b>	<b>24</b>
<b>ITEM 7A. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK</b>	<b>38</b>
<b>ITEM 8. FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA</b>	<b>39</b>
<b>ITEM 9. CHANGES IN AND DISAGREEMENTS WITH ACCOUNTANTS ON ACCOUNTING AND FINANCIAL DISCLOSURE</b>	<b>69</b>
<b>ITEM 9A. CONTROLS AND PROCEDURES</b>	<b>69</b>
<b>ITEM 9B. OTHER INFORMATION</b>	<b>70</b>
<b>PART III</b>	<b>70</b>
<b>ITEM 10. DIRECTORS AND EXECUTIVE OFFICERS OF THE REGISTRANT</b>	<b>70</b>
<b>ITEM 11. EXECUTIVE COMPENSATION</b>	<b>70</b>
<b>ITEM 12. SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT AND RELATED STOCKHOLDER MATTERS</b>	<b>70</b>
<b>ITEM 13. CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS</b>	<b>70</b>
<b>ITEM 14. PRINCIPAL ACCOUNTANT FEES AND SERVICES</b>	<b>70</b>
<b>PART IV</b>	<b>71</b>
<b>ITEM 15. EXHIBITS, FINANCIAL STATEMENT SCHEDULES</b>	<b>71</b>
<b>SIGNATURES</b>	<b>76</b>



## 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-tied PV inverters in the residential, commercial, and utility-scale markets. As a result, the offerings of Advanced Energy now provide our customers with multiple solutions in a wider power range and increases 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. Note 2 — *Business Acquisition and Disposition* to our Consolidated Financial Statements describes the acquisition of PV Powered and the disposition of our gas flow control business.

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 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.

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 unique from those of our traditional thin-film capital equipment market. As a result, management 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 Solar Energy, enable improved execution and a strategic focus on two distinct markets.

The Thin Films business unit principally serves original equipment manufacturers (“OEM”) and end customers in the semiconductor, flat panel display, solar panel, and other capital equipment markets. The Solar Energy business unit focuses 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 enables 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. Note 20 — *Segment, Geographic and Significant Customer Information* to our Consolidated Financial Statements describes our business units and their related financial information.

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-FILMS*

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 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 are used in the semiconductor industry, as well as, the solar panel and LED industries, in order to 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 ENERGY*

Our solar power inverters offer a transformer-based or transformerless advanced grid-tied 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 (“U.S.”), the People’s Republic of China (“PRC”), Japan, South Korea, Taiwan, Germany, and Great Britain.

## **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. For more information related to the markets in which we compete and the current environment in those markets, please see *Business Environment and Trends* in Item 7. Management’s Discussion and Analysis.

## **Thin Films**

### *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 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 has developed processes for manufacturing solar cells on non-silicon substrates, such as, glass and metal by using thin-film processes that 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*

Manufacturers of flat panel displays 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. This technology is also used in manufacturing 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*

Data storage equipment manufacturers use our products in their capital equipment which allows them to produce 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 consumer electronics including audio, video, gaming, cell phone, and entertainment markets.

### *ARCHITECTURAL GLASS CAPITAL EQUIPMENT*

Low Emissivity or Low-E architectural glass manufacturers use our tools in their production equipment. 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*

The thin-film deposition processes are also used to produce products for a variety of industrial markets. Our solutions allow thin films to be 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 specular surfaces resulting from plasma-based processing make it the preferred method of applying thin films.

### **Solar Energy**

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

### **Customers**

Our products are sold worldwide to approximately 460 OEMs and integrators and directly to more than 1,450 end users. Our ten largest customers accounted for approximately 44.6% of our sales in 2011, 48.8% of our sales in 2010, and 51.6% of our sales in 2009. 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.

Applied Materials Inc., our largest customer, accounted for 13.1% of our sales in 2011, 18.8% of our sales in 2010, and 21.4% of our sales in 2009. No other customer accounted for greater than 10% of our sales in 2011, 2010, or 2009. The loss of Applied Materials, Inc. as a customer could have a material adverse effect on our results of operations.

## Backlog

Our backlog was approximately \$76.9 million at December 31, 2011, a 17.4% decrease from \$93.1 million at December 31, 2010. This decrease was the result of an industry-wide slowdown in capital equipment investments during the second half of 2011, particularly from the thin film solar panel market. 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, Great Britain, 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, 2011, 2010, and 2009. Sales are attributed to individual countries based on the location of our sales office.

Sales to external customers:	Years ended December 31,		
	2011	2010	2009
	(In thousands)		
United States	\$ 338,343	\$ 270,606	\$ 71,439
Canada	3,622	—	—
North America	<u>341,965</u>	<u>270,606</u>	<u>71,439</u>
People's Republic of China	38,654	48,024	11,372
Other Asian countries	79,424	88,872	55,081
Asia	<u>118,078</u>	<u>136,896</u>	<u>66,453</u>
Germany	47,228	47,339	19,949
Other European Countries	<u>9,528</u>	<u>4,573</u>	<u>4,005</u>
Europe	<u>56,756</u>	<u>51,912</u>	<u>23,954</u>
Total sales	<u>\$ 516,799</u>	<u>\$ 459,414</u>	<u>\$ 161,846</u>

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

## Manufacturing

The manufacturing of our Thin Films related Power Products is performed in Shenzhen, PRC and Seoul, South Korea. Manufacturing in these locations, primarily the PRC, exposes us to risks, such as exchange controls and currency restrictions, changes in local economic conditions, changes in PRC laws and regulations, government actions, and unsettled political conditions. The thermal instrumentation product line is 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 production of solar inverters to manage capacity during periods of high demand.

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 months with an option to extend our services for up to an additional 6 months. The option to extend was executed in October 2011 for another six 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 their components performance, quality, and reliability on our power conversion product at our customers' and their customer's processes. The qualification process follows semiconductor industry standard practices, such as "copy exact";
- (2) monitoring the financial condition of key suppliers;
- (3) maintaining appropriate inventories of key parts, including making last time purchases of key parts when notified by suppliers that they are ending the supply of those 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 98 United States patents and 45 foreign-issued patents, and have 50 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 for which our intellectual property applies.

During fiscal 2010, we acquired PV Powered and all related intellectual property including eight United States patents. At the time of acquisition, PV Powered had 13 patent applications pending in the United States and nine 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 2011, we were granted patents related to the following:

- Plasma inhibiting controls, power monitoring, power supply control and ignition, and electrical generation systems for Thin Film power conversion systems, and
- Anti-islanding methods, power tracking tools, inverter interface devices, and DC conversion operations 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 most of our patents and know-how between affiliates throughout the world, 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.

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 we do. In some cases, competitors are smaller than we are, but are well established in specific product niches. MKS Instruments, Inc., Comdel, Inc., Daihen Corporation, Kyosan Electric Mfg. Co., Ltd., Hüttinger Elektronik GmbH, Comet Holding AG, New Plasma Products (NPP), Entech, Plasmart, and ADTech 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 emerge 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 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 \$65.0 million in 2011, \$56.6 million in 2010, and \$41.1 million in 2009, representing 12.6% of our sales in 2011, 12.3% of our sales in 2010, and 25.4% of our sales in 2009.

## **Employees**

As of December 31, 2011, we had a total of 1,471 employees. There is no union representation of our employees, notwithstanding statutory organization rights applicable to our employees in the PRC, and we have 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;
- 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, 2011 are as follows:

Garry W. Rogerson, 59, has joined us in August 2011 as our Chief Executive Officer and Board member. Mr. Rogerson was Chairman and Chief Executive Officer of Varian, Inc., a major supplier of scientific instruments and consumable laboratory supplies, vacuum products, and services from February 2009 and 2004, respectively until the purchase of Varian by Agilent Technologies, Inc. in May 2010. Mr. Rogerson served as Varian’s Chief Operating Officer from 2002 to 2004, as Senior Vice President, Scientific Instruments from 2001 to 2002, and as Vice President, Analytical Instruments from 1999 to 2001. Mr. Rogerson received an honours degree and Ph.D. in biochemistry from the University of Kent at Canterbury. Mr. Rogerson is also the chairman of Coherent, Inc., a position he has held since 2007.



Danny C. Herron, 57, joined us in September 2010 as Executive Vice President and Chief Financial Officer. 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 to 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 to 2008 first as Senior Vice President and Chief Financial Officer and later as President and Chief Financial Officer. From 2002 to 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.

Yuval Wasserman, 57, joined us in August 2007 as Senior Vice President, Sales, Marketing and Service. In October 2007 he was promoted to Executive Vice President, Sales, Marketing and Service. In April 2009 he was promoted to Executive Vice President and Chief Operating Officer of the Company and then in August 2011 he was promoted to President of the Thin Films Business Unit. Beginning in from May 2002 Mr. Wasserman served as the president and later as chief executive officer of Tevet Process Control Technologies, Inc., a semiconductor metrology company, until July 2007. 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 Inc., 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.

Thomas O. McGimpsey, 50, joined us in April 2009 as Vice President and General Counsel and was promoted to Executive Vice President of Corporate Development and General Counsel in August 2011. From February 2008 to April 2009, Mr. McGimpsey held the position of Vice President of Operations for First Data Corporation. During 2007, Mr. McGimpsey was a consultant and legal advisor to various companies. From July 2000 to January 2007, Mr. McGimpsey held various positions with McDATA Corporation such as Executive Vice President of Business Development and Chief Legal Officer, Senior Vice President and General Counsel, and Vice President of Corporate Development. From February 1998 to its sale in June 2000, Mr. McGimpsey held the position of Director and Senior Corporate Attorney at US WEST, Inc. From 1991 to 1998, Mr. McGimpsey was in private practice at national law firms. From 1984 to 1988, Mr. McGimpsey was a Senior Engineer for Software Technology, Inc. Mr. McGimpsey received his Masters of Business Administration from Colorado State University (with honors) in 2008, his Juris Doctor degree from the University of Colorado in 1991 and his Bachelor of Science degree in Computer Science (with a minor in electrical systems) from Embry-Riddle Aeronautical University in 1984.

## **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 shares of our common stock.

Our business, financial condition, results of operations, and cash flow, could be materially adversely affected by any of these risks. The value of shares of our 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 purchases 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 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, 2011 under these purchase commitments and agreements was \$59.8 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.

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 fulfill customer orders, 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 (such as feed-in tariffs and tax credits), 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. The current debt crisis in Europe and the resulting economic uncertainty and instability in the region could result in limited access to capital for our customers or changes to government incentives for renewable energy which could cause the delay or cancellation of current projects in the solar industry. 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.

**We may not realize the expected results from the implementation of restructuring plans.**

During the second half of 2011, we implemented a restructuring plan to align our cost structure with current industry conditions in the Thin Film Business Unit and the Solar Energy Business Unit. As part of this restructuring plan we reduced staff, exited excess office and warehouse space, relocated engineering and research and development resources closer to our customers, and began the transition of manufacturing sub-assemblies for our solar inverters in our Shenzhen facility. As with any restructuring initiative, there could be many unintended results and there are always risks that execution may not meet expectations in the future. If we are unable to complete the restructuring plan or effectively execute the initiatives under the plan, or our customers' requirements change, we may not realize the expected results or could incur restructuring charges greater than anticipated, which could materially affect our financial condition and results of operations.

***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 photovoltaic 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 photovoltaic 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. These additional expenditures 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 the 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.

***Recent unfair trade complaints filed against imports of solar cells from China could have significant negative effects on our business, financial condition or results of operations.***

In October 2011, a coalition of several U.S. solar companies filed complaints with the U.S. Department of Commerce (“DOC”) and International Trade Commission (“ITC”) charging that Chinese solar cell manufacturers have engaged in, and benefitted from, various unfair trade practices. A similar trade case may also be filed in Europe. While this case is in its preliminary stages, if the DOC and ITC ultimately find evidence of injurious dumping and/or subsidization, significant punitive import duties, including retroactive duties, on the wholesale price of all solar panel modules (including crystalline silicon) made in China could be imposed. This case has created uncertainty that is resulting in some developers delaying decisions and, in some cases, redesigning solar projects so that they do not use solar panel modules from China. Since some of our inverters are well-suited for use with crystalline silicon panel modules, the current uncertainty or an unfavorable ruling could have a material adverse impact on our business, financial position or results of operations.

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

Our ten largest customers accounted for 44.6% of our sales in 2011, 48.8% of our sales in 2010, and 51.6% of our sales in 2009. Applied Materials Inc., our largest customer, accounted for 13.1% of our sales in 2011, 18.8% of our sales in 2010, and 21.4% of our sales in 2009. No other single customer accounted for more than 10% of our sales during 2011, 2010 or 2009. At December 31, 2011 our accounts receivable from Hitachi Metals, Ltd. comprised 16.2% of our total accounts receivable. At December 31, 2010 our accounts receivable from ULVAC, Inc. represented 10.5% of our total accounts receivable. No other single customer accounted for more than 10% of our accounts receivable as of December 31, 2011, or 2010. 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.

***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 materially and 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.

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, 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.

***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.

***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, pay damages or warranty claims, and we could 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 and Seoul, South Korea. 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 34.5% of our total sales in 2011, 41.1% in 2010, and 55.9% in 2009. 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;
- 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 \$66.3 million in accounts receivable from foreign customers as of December 31, 2011; 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 customs regulations, changes in tax policies, 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 amongst various economic sectors of the PRC. The PRC government has implemented various measures to encourage economic development and guide the allocation of resources. Recent strikes by workers and picketing in front of the factory gates of certain companies in Shenzhen have caused unrest among some workers seeking higher wages, which could impact our manufacturing facility in Shenzhen. While some of the government's measures may benefit the overall economy of the PRC, they may have a negative effect on us. For example, our financial



condition and results of operations may be materially and adversely affected by government control over capital investments or changes in tax regulations that are applicable to us as well as work stoppages.

***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 repair 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 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 goods in our inverter product line. 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 most of 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.

***Reductions in government subsidies could impact revenue and results of operations in the renewable energy markets.***

Various government subsidies, including feed-in tariffs, have been a significant driver in the growth of the renewable energy industry. Countries throughout the world are providing incentives to spur adoption of renewable energy. While many countries, including the United Kingdom, certain regions in the United States and Canada, India, and China, are beginning to adopt feed-in tariffs and varying subsidies, others are re-evaluating the level of incentive they wish to provide. A number of countries, including Germany and the Czech Republic have proposed reductions to their feed-in tariffs while Italy reduced 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 tariffs, including any potential further reductions, could result in a significant decline in demand and price levels for renewable energy products and result in foreign competitors moving into the U.S. solar market, which could have a material adverse effect on our business, financial condition, and 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 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 materially and 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 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 a substantial amount of our management's 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.

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. Any changes in the 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 \$46.5 million of goodwill and \$43.4 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. Only some of the required rules and regulations have been adopted or proposed. The federal agencies were 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, and the SEC has proposed but not adopted a rule, for disclosure regarding certain minerals necessary to the functionality or production of a product manufactured by reporting companies. Complying with this disclosure requirement and other requirements of the Dodd-Frank Act may increase our costs of operations.

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

In 2010, we 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 entered 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 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 management’s attention and resources.

***Our operating results are subject to fluctuations, and if we fail to meet the expectations of securities analysts or investors, our share price may decrease significantly.***

Our annual and quarterly results may vary significantly depending on various factors, many of which are beyond our control. Because our operating expenses are based on anticipated revenue levels, our sales cycle for development work is relatively long, and a high percentage of our expenses are fixed for the short term, a small variation in the timing of recognition of revenue can cause significant variations in operating results from period to period. If our earnings do not meet the expectations of securities analysts or investors, the price of our stock could decline.

***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 7.8% of our outstanding common stock as of February 28, 2012. 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.

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

In 2010 we sold our gas flow control business, which includes our Aera<sup>®</sup> 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 Hitachi Metals. As part of the transition of this product line to Hitachi Metals, we agreed to provide cost-plus contract manufacturing services for a period of twelve months (with a potential one-time extension of six months) and agreed to be the authorized service provider for the product line for a period of three years. We were also 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. Hitachi Metals, Ltd. has requested, and we have agreed, to provide the six month extension of our manufacturing services. 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, 2011 is set forth below:

<u>Location</u>	<u>Principal Activity</u>	<u>Business Unit</u>	<u>Ownership</u>
Fort Collins, CO	Corporate headquarters, research and development, manufacturing, distribution, sales, and service	Thin Films / Solar Energy	Leased
Austin, TX	Distribution and service	Thin Films	Leased
Bend, OR	Research and development, manufacturing, distribution, sales, and service	Solar Energy	Leased
Dallas, TX	Distribution and service	Thin Films	Leased
San Jose, CA	Distribution, sales, and service	Thin Films / Solar Energy	Leased
Vancouver, WA	Research and development, manufacturing, distribution, sales, and service	Thin Films	Leased
Toronto, Canada	Distribution and Sales	Solar Energy	Leased
Shanghai, China	Distribution and sales	Thin Films	Leased
Shenzhen, China	Manufacturing and distribution	Thin Films / Solar Energy	Leased
Filderstadt, Germany	Distribution, sales, and service	Thin Films / Solar Energy	Leased
Hwasung Kyunggi-do, South Korea	Distribution, sales, and service	Thin Films	Leased
Sungnam City, South Korea	Distribution, sales, and service	Thin Films	Owned
Chungcheongnam-do, South Korea	Sales and service	Thin Films	Leased
Kyonggi-do (Paju) South Korea	Sales and service	Thin Films	Leased
Singapore	Sales and service	Thin Films	Leased
Taipei, Taiwan	Distribution, sales, and service	Thin Films	Leased
Hachioji, Japan	Research and development, distribution, sales, and service	Thin Films	Leased

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 make 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.

## ITEM 4. MINE SAFETY DISCLOSURES

None

## 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 February 28, 2012, the number of common stockholders of record was 514, and the closing sale price of our common stock on the NASDAQ Global Select Market on that day was \$12.19 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:

	2011		2010	
	High	Low	High	Low
First Quarter	\$ 16.83	\$ 13.32	\$ 16.66	\$ 13.12
Second Quarter	\$ 16.22	\$ 13.51	\$ 17.43	\$ 11.50
Third Quarter	\$ 15.02	\$ 8.62	\$ 18.16	\$ 11.99
Fourth Quarter	\$ 11.01	\$ 8.01	\$ 15.13	\$ 11.47

#### 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.

#### Share Repurchases

In November 2011, the Board of Directors authorized a program to repurchase up to \$75 million of our common stock over a twelve month period. There is no minimum number of shares to be repurchased under the plan and it may be suspended or discontinued at any time. Share repurchases through December 31, 2011 are as follows (in thousands):

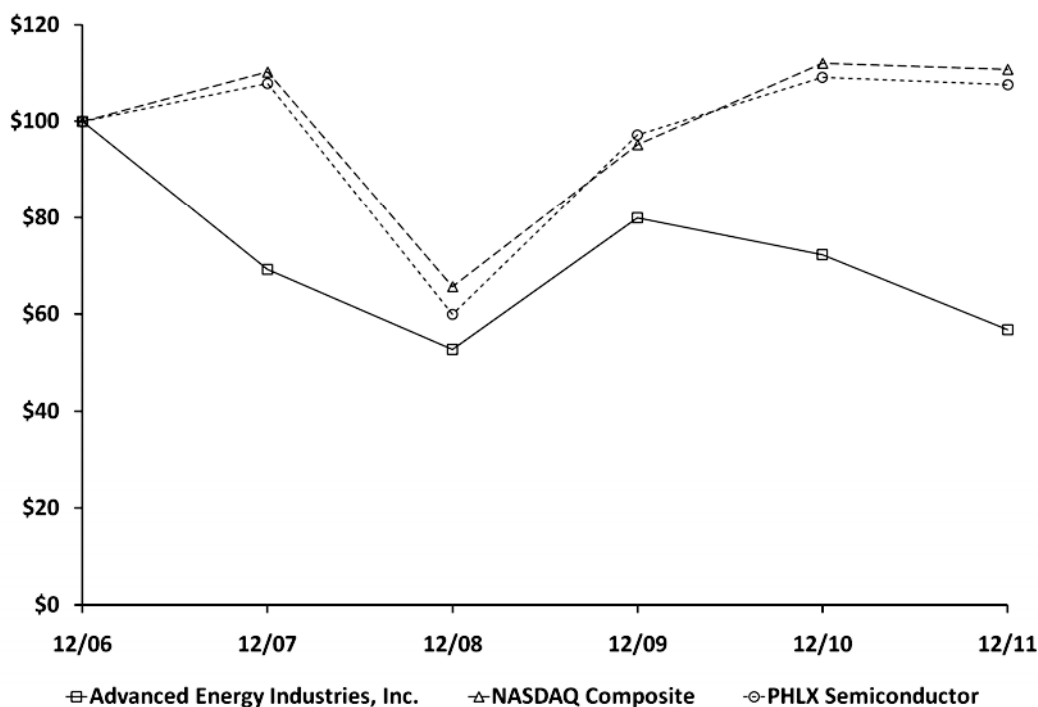
Period	Total Number of Shares Purchased	Average Price Paid per Share	Total Number of Shares Purchased as Part of Publicly Announced Plans or Programs	Maximum Number (or Approximate Dollar Value) of Shares that May Yet Be Purchased Under the Plan or Program
November 1, 2011 to November 30, 2011	17	\$ 8.54	17	\$ 74,859
December 1, 2011 to December 31, 2011	1,728	10.28	1,728	57,100
Total	1,745	\$ 10.26	1,745	

## Performance Graph

The performance graph below shows the five-year cumulative total stockholder return on our common stock during the period from December 31, 2006 through December 31, 2011. 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, 2006 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 12/31/06 in stock or index, including reinvestment of dividends.  
Indices and our stock performance calculated on a calendar year-end basis.

	12/06	12/07	12/08	12/09	12/10	12/11
Advanced Energy Industries, Inc.	\$ 100.00	\$ 69.32	\$ 52.73	\$ 79.92	\$ 72.28	\$ 56.86
NASDAQ Composite	100.00	110.26	65.65	95.19	112.10	110.81
PHLX Semiconductor	100.00	107.88	60.06	60.06	109.11	107.58



## 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:

	Years Ended December 31,				
	2011	2010	2009	2008	2007
	(In thousands, except per share data)				
<b>Consolidated Statements of Operations Data:</b>					
Sales	\$ 516,799	\$ 459,414	\$ 161,846	\$ 285,166	\$ 330,686
Operating income (loss)	49,251	65,188	(97,140)	5,255	29,645
Income (loss) from continuing operations before income taxes	50,468	67,409	(95,230)	8,138	34,455
Income (loss) from continuing operations, net of income taxes	36,854	53,593	(101,812)	(6,501)	24,584
Income (loss) from discontinued operations, net of income taxes	(540)	17,599	(893)	4,722	9,777
Net income (loss)	36,314	71,192	(102,705)	(1,779)	34,361
<b>Earnings per Share:</b>					
<b>Continuing Operations:</b>					
Basic earnings (loss) per share	\$ 0.85	\$ 1.25	\$ (2.43)	\$ (0.15)	\$ 0.54
Diluted earnings (loss) per share	\$ 0.84	\$ 1.23	\$ (2.43)	\$ (0.15)	\$ 0.54
<b>Discontinued Operations:</b>					
Basic earnings (loss) per share	\$ (0.01)	\$ 0.41	\$ (0.02)	\$ 0.11	\$ 0.22
Diluted earnings (loss) per share	\$ (0.01)	\$ 0.41	\$ (0.02)	\$ 0.11	\$ 0.21
<b>Net Income (Loss):</b>					
Basic earnings (loss) per share	\$ 0.84	\$ 1.66	\$ (2.45)	\$ (0.04)	\$ 0.76
Diluted earnings (loss) per share	\$ 0.83	\$ 1.64	\$ (2.45)	\$ (0.04)	\$ 0.75
Basic weighted-average common shares outstanding	43,465	42,862	41,966	42,537	45,156
Diluted weighted-average common shares outstanding	43,954	43,419	41,966	42,537	45,704
<b>Consolidated Balance Sheets Data:</b>					
Total assets	\$ 533,378	\$ 505,157	\$ 345,125	\$ 420,637	\$ 459,028
Total long-term debt and lease obligations	125	191	76	164	243

## 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

Advanced Energy experienced significant changes in the markets it serves in 2011. After an exceptional year in 2010, 2011 began with the same level of growth and opportunities. As the year progressed, the markets served by our Thin Films business unit began to experience a significant slow-down due to uncertain economic conditions. We demonstrated speed and flexibility in responding to the changing needs of our markets and began strategic initiatives to re-align our business to move the research and development and engineering functions closer to our customers. These actions will reduce our time to market for new product development.

The acquisition of PV Powered in May 2010 expanded our Solar Energy business and positioned us among the leaders in the North American solar inverter market. Solar inverter sales grew to \$188.2 million in 2011, significant growth over 2010.

## 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 Solar Energy products, we provide installation, support, and services after the product has been shipped. For arrangements containing these additional elements, we allocate revenue based on vendor specific objective evidence of the selling price of each individual element of the arrangement. As we also sell these additional elements separately, the evidence is our selling price for those elements when sold separately. We defer the revenue of any undelivered elements until the undelivered element is delivered. 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 Solar Energy 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, 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. Additionally, if our credit loss rates prove to be greater than we currently estimate, we could record additional reserves for doubtful accounts.

### ***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 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 in excess of our current estimates 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 and provide the option to purchase additional warranty coverage up to 20 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. As a result of our acquisition, we recorded intangible assets and goodwill. Goodwill and indefinite-lived intangible assets are subject to annual impairment testing, as well as, testing upon the occurrence of any event that indicates a potential impairment. In September 2011, the FASB issued Accounting Standards Update (“ASU”) 2011-8 *Intangibles — Goodwill and Other* which allows an assessment of qualitative factors in determining if it is more likely than not that goodwill is impaired. If this assessment indicates that it is more likely than not that goodwill is impaired the next step of impairment testing compares the fair value

of a reporting unit to its carrying value. Goodwill would be impaired if the resulting implied fair value of goodwill was less than the recorded carrying value of the goodwill. We adopted the new guidance related to goodwill impairment testing in 2011 and therefore performed an assessment of qualitative factors for our annual impairment test in 2011, including macroeconomic conditions, industry and market conditions, cost factors, and overall financial performance of our solar inverter business. This assessment resulted in the conclusion that there is no impairment of goodwill.

Finite-lived intangible assets and other long-lived assets are subject to an impairment test if there is an indicator of impairment. 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. 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. Additionally, 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 could 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.

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 2009 entity restructuring, if those estimates and judgments prove to be incorrect, we could record further adjustments to our tax provisions and accruals, which could materially and adversely affect our results of operations.

### **Business Environment and Trends**

#### ***SEMICONDUCTORS***

Investment in semiconductor capital equipment spending increased overall worldwide for the second straight year, although at a growth rate lower than 2010. After a surge of capital investment going into 2011, fab utilization rates declined in the second half of the year while integrated circuit inventories rose, forcing many semiconductor manufacturers to reduce inventory levels in the second half. Consumer spending picked up to some extent during the fourth quarter holiday season, but not enough to lower the level of inventory of electronic devices that use semiconductors.

Emerging players in the Korean wafer fab equipment market continued to gain momentum and capture market share in plasma-enhanced chemical vapor deposition (“PECVD”) and etch technologies for dynamic random-access memory (“DRAM”), and are increasing the level of competition around price, performance and responsiveness. We believe we are well-positioned in this region as our local presence grows, and as we deepen relationships with the evolving Korean customer base.

Looking forward, we anticipate global macroeconomic trends to somewhat offset expected improvements in consumer electronics demand as we move through the first half of 2012. As inventory levels continue to decrease, we expect modest gains in demand for semiconductor capital equipment toward the second half of 2012.

## *FLAT PANEL DISPLAY*

Growth in our flat panel display (“FPD”) market is driven by investment in new technologies, particularly in the development of next generation high-definition televisions, smart phones and tablet computers. The majority of 2011 FPD investment was centered on mass production of active-matrix light-emitting diode displays (“AMOLED”) at generation 5.5 and higher generation liquid crystal display (“LCD”) panels at generation 8 and above.

Early 2011 equipment investment paused in the second half of the year as manufacturers began to work through their inventory and focus on the migration to AMOLED. Overall, we expect flat panel display sales to remain slow throughout most of 2012 as customers continue to work through inventory and continue the migration to AMOLED.

We believe we are well-positioned to benefit from growth in etch and PVD where we hold strong technology and market positions. Similar to the semiconductor market, new Korean equipment suppliers are emerging and capturing market share in FPD. Our continued investment in localized Korean manufacturing and expanded capabilities brings us closer to our customers and enhances our responsiveness to their evolving needs.

## *THIN FILM RENEWABLES*

Strong demand for our crystalline silicon (“c-Si”) PV products in Europe and China drove initial strength in renewables sales early in 2011. However, the unexpected and sudden decline in PV module prices negatively impacted thin films renewables sales for most of 2011. Solar subsidy cuts in Germany and Italy early in the year triggered a global oversupply of solar panels and the ensuing price declines. As a result of this oversupply and uncertain demand in the major European markets, wafer, cell and module production capacity is likely not to expand until the second half of 2012 at the earliest. Many of the largest suppliers of PV products along with smaller Chinese solar companies will most likely run their plants below capacity while some may stop production completely. This scenario will have an adverse impact on our sales in this market for the foreseeable future.

Thin-film solar manufacturing, including copper indium gallium selenide (“CIGS”) and cadmium telluride (“CdTe”), will continue to increase capacity as the technology matures, keeping the relative market share of thin film to c-Si constant for the foreseeable future. Our power conversion technology for sputtering are well-positioned in these markets and will benefit from increased demand as customers require more control and repeatability in their deposition processes due to capacity increases.

## *INVERTER*

We believe the long-term impact of declining PV module prices will be an increase in solar projects as the overall cost for a solar installation falls and the financial model for power producers gets more attractive. However, the short-term impact experienced in 2011 was postponement and/or delays of projects in an effort by customers to secure the lowest price modules available.

Advances in inverter technology, such as higher efficiency and intelligent grid support, will take on a greater significance in 2012 and beyond, particularly for multi-megawatt projects in the utility industry. This technology development will be critical in order for projects to be financial viable given the anticipated cuts in global solar incentives. Additionally, global demand has expanded from Europe to growth markets in North America and Asia and, as a result, has and will continue to drive increased global competition.

## **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 full year ended December 31, 2011 and 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.

## *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 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 Solar Energy, enable improved execution and a strategic focus on their distinct markets.

The Thin Films business unit principally serves our OEM and end customers in the semiconductor, flat panel display, solar panel, and other capital equipment markets, while the Solar Energy business unit focuses 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 enables 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, except for revenue, segment information based on the two new business units for 2009 and 2010 has not been reported as it is impracticable to do so.

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>2011</b>	<b>2010</b>	<b>2009</b>
	<b>(In thousands)</b>		
Sales	\$ 516,799	\$ 459,414	\$ 161,846
Gross profit	205,157	199,199	49,790
Operating expenses	155,906	134,011	146,930
Operating income (loss)	49,251	65,188	(97,140)
Other income	1,217	2,221	1,910
Income (loss) from continuing operations before income taxes	50,468	67,409	(95,230)
Provision for income taxes	13,614	13,816	6,582
Income (loss) from continuing operations, net of income taxes	<u>\$ 36,854</u>	<u>\$ 53,593</u>	<u>\$ (101,812)</u>

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>2011</b>	<b>2010</b>	<b>2009</b>
Sales	100.0%	100.0%	100.0%
Gross profit	39.7%	43.4%	30.8%
Operating expenses	30.2%	29.2%	90.8%
Operating income (loss)	9.5%	14.2%	(60.0)%
Other income	0.3%	0.5%	1.2%
Income (loss) from continuing operations before income taxes	9.8%	14.7%	(58.8)%
Provision for income taxes	2.6%	3.0%	4.1%
Income (loss) from continuing operations, net of income taxes	<u>7.2%</u>	<u>11.7%</u>	<u>(62.9)%</u>

## SALES

The following tables summarize annual net sales, and percentages of net sales, by segment for each of the years ended 2011, 2010, and 2009:

	Years Ended December 31,			Increase/ (Decrease)		Percent Change	
	2011	2010	2009	2011 v. 2010	2010 v. 2009	2011 v. 2010	2010 v. 2009
(In thousands)							
<b>Thin Films:</b>							
Semiconductor capital equipment market	\$ 146,175	\$ 174,404	\$ 62,991	\$ (28,229)	\$ 111,413	(16.2)%	176.9%
Non-semiconductor capital equipment	130,378	131,138	53,958	(760)	77,180	(0.6)%	143.0%
Global Support	52,061	48,154	37,130	3,907	11,024	8.1%	29.7%
Total Thin Films	328,614	353,696	154,079	(25,082)	199,617	(7.1)%	129.6%
<b>Solar Energy</b>	188,185	105,718	7,767	82,467	97,951	78.0%	1,261.1%
Total sales	\$ 516,799	\$ 459,414	\$ 161,846	\$ 57,385	\$ 297,568	12.5%	183.9%

	Years Ended December 31,		
	2011	2010	2009
<b>Thin Films:</b>			
Semiconductor capital equipment market	28.3%	38.0%	39.0%
Non-semiconductor capital equipment	25.2%	28.5%	33.3%
Global Support	10.1%	10.5%	22.9%
Total Thin Films	63.6%	77.0%	95.2%
<b>Solar Energy</b>	36.4%	23.0%	4.8%
Total sales	100.0%	100.0%	100.0%

## Total Sales

Total sales for the twelve months ended December 31, 2011 increased 12.5% to \$516.8 million from \$459.4 million for the twelve months ended December 31, 2010. The increase in sales was driven by a significant increase in inverter sales by our Solar Energy business unit. The increase in inverter sales in 2011 was due to growth in overall demand in North America for commercial and utility-scale solar applications. The increase in Solar Energy was partially offset by a slight decline in sales of our Thin Films business unit caused by a slowdown in demand in all of our end markets, particularly in the second half of the year. This slowdown was the direct result of uncertainty in the global economy, caused by lower consumer spending on products such as desktop computers, laptops, and high definition flat panel televisions.

Total sales increased 183.9% to \$459.4 million in 2010 as compared to 2009. The increase in sales was driven by a recovery in all of the Thin Film end markets that we serve from very depressed levels in 2009 caused by a global recession. Additionally, we experienced significant levels of customer adoption of our utility-scale inverter products in 2010 and acquired PV Powered, which contributed an additional \$65.7 million in inverter sales from the acquisition date of May 3, 2010 through the end of the year.

## Thin Films

Results for Thin Films for the twelve months ended December 31, 2011, 2010, and 2009 are as follows (in thousands):

	Years Ended December 31,		
	2011	2010	2009
Sales	\$ 328,614	\$ 353,696	\$ 154,079
Operating Income	68,241		

Total Thin Film sales for 2011 declined 7.1% as compared to 2010 as a result of weakening economic conditions across all of our thin film markets in the second half of the year. This uncertainty has tempered demand for consumer electronics, which drives capital spending throughout the markets we serve.

Total Thin Film sales increased 129.6% in 2010 as compared to 2009. This increase was the result of an economic recovery in 2010 that was marked by growing consumer confidence and spending and high levels of capital investment by our OEM customers and their end users to meet consumer demand.

In 2011, sales in our thin-film semiconductor market decreased 16.2% to \$146.2 million, or 28.3% of sales, from \$174.4 million, or 38.0% of sales in 2010. The first half of the year saw a continuation of the growth experienced in 2010 as a transition from DRAM to flash memory brought on continued investment in new products and capacity in the semiconductor capital equipment industry. However, the second half of 2011 was marked by uncertain economic conditions that began to have a negative impact on capacity utilization and investment in capital equipment among our customers' end users. We anticipate this uncertainty will continue into the first half of 2012, but may recover towards the second half of the year.

In 2010, semiconductor market sales rose 176.9% to \$174.4 million, or 38.0% of sales, from \$63.0 million, or 39.0% of sales in 2009. The increase was due to a recovery from extremely low investment levels in 2009 that saw capacity at record lows in the semiconductor capital equipment market. Demand from our customers' end users grew as they rebuilt capacity throughout the year, made investments in new technology and rebuilt inventory to satisfy the consumer electronics market.

Sales to the non-semiconductor capital equipment markets remained flat in 2011 as compared to 2010. The markets that comprise our non-semiconductor capital equipment markets include flat panel display, solar panel, data storage, architectural glass, and other industrial thin-film manufacturing equipment markets. Our customers in these markets are predominantly large OEMs. Although our customers in the non-semiconductor capital equipment markets were also adversely impacted by negativity in consumer sentiment, lower capital spending, and lower factory utilization rates, the extent and timing of the impact was slightly different in each end market.

Sales to customers in the flat panel display market increased 4.6% to \$29.8 million, or 5.8% of total sales in 2011 as compared to \$28.5 million, or 6.2% of total sales in 2010. While revenue year-over-year was relatively flat, we experienced a large increase in demand in the early part of 2011 that was the continuation of an investment cycle that began in 2010. This investment for capacity expansion in both Korea and the PRC came online in the second half of the year and resulted in very low levels of investment during the remainder of the year and, most likely, will continue into the first half of 2012.

Sales to customers in the solar panel market decreased 14.1% to \$50.5 million, or 9.8% of total sales in 2011 as compared to \$58.8 million, or 12.8% of total sales in 2010. We experienced a very robust first half of 2011 due to the continuation of a heavy capital investment cycle in the solar panel market, however, that heavy investment resulted in an ensuing overcapacity that ended virtually all investment in the latter half of the year and, most likely, into 2012. Due to this overcapacity, panel prices have been declining over the past several quarters and we will need to wait out a market pause as our customers' end users postpone investment in new technology and wait for the consolidation and/or reduction of panel inventors around the world and the stabilization of panel prices.

In 2010, total sales to the non-semiconductor capital equipment markets increased 143.0% to \$131.1 million, or 28.5% of sales, in 2010 compared to \$54.0 million, or 33.3% of sales, in 2009. The increase in non-semiconductor sales in 2010 was due to capacity expansion in the flat panel display market and capacity expansion in the solar panel market.

In 2010, sales to customers in the flat panel display 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. This increase was the result of a significant cycle of investing by panel manufacturers in Korea and the PRC which was driven by the market adoption of flat panels by Chinese consumers, the growth in touch screens for tablet computers and smart phones, and the migration of new technology such as LED backlighting and 3D televisions around the world.

In 2010, 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. Additionally, the North American market grew in 2010 as larger megawatt output solar array projects resulted in an increase in the demand for solar panels.

Global support revenue for 2011 increased 8.1% to \$52.1 million, or 10.1% of total sales in 2011 as compared to \$48.2 million, or 10.5% of total sales in 2010. Service activity levels were stable in most of our geographic regions and end markets as changes due to tighter maintenance budgets were offset by sales of used equipment.

The outlook for our global support business continues to be strong, the risk of our end users more tightly managing maintenance budgets in response to drops in factory utilization should be offset by the expansion of our product offerings in the growing solar array service market.

In 2010, global support revenue grew 29.7% to \$48.2 million, or 10.5% of total sales, compared to \$37.1 million, or 22.9% of sales, in 2009. The increase in global support sales in 2010 was due to an increase in factory utilization by our customers throughout the year, which drove demand for repairs, replacement parts, and inventory restocking. Additionally, as factory utilization remained high, our customers looked to us to provide them with used and refurbished equipment to be used as spares for their fabrication lines.



Applied Materials Inc., our largest customer, accounted for \$68.0 million or 13.1% of our sales in 2011; \$86.4 million, or 18.8% of our sales in 2010; and \$34.7 million, or 21.4%, of our sales in 2009. Our sales to Applied Materials included sales for the semiconductor capital equipment market, as well as the solar and flat panel display markets.

### *Solar Energy*

Results for Solar Energy for the twelve months ended December 31, 2011, 2010, and 2009 are as follows (in thousands):

	<b>Years Ended December 31,</b>		
	<b>2011</b>	<b>2010</b>	<b>2009</b>
Sales	\$ 188,185	\$ 105,718	\$ 7,767
Operating income	4,323		

Solar Energy sales increased \$82.5 million, or 78.0%, to \$188.2 million in 2011, as compared to \$105.7 million in 2010. Solar Energy comprised 36.4% of total sales in 2011 as compared to 23.0% in 2010. Sales in 2011 also included a full year of sales from PV Powered which we acquired on May 3, 2010. The majority of our sales in the inverter market continued to come from commercial and utility-scale applications. The addition of PV Powered's product portfolio expanded the range of power capacities in which we can compete and added a line of residential inverters.

The increase in sales in 2011 as compared to 2010 was the result of growth in overall demand in North America for commercial and utility-scale solar applications. We anticipate that inverter sales will increase in 2012 due to continued investment by utilities and municipalities in solar applications in North America. However, our revenue in the first quarter of 2012 will be down due to normal seasonal delays typically experienced in cold weather states. We are also cautious about delays and pushouts of business in response to the continued uncertainty around solar energy incentives and dropping prices for solar panels. Although we expect lower solar panel prices to ultimately fuel growth of solar array installations, uncertainty regarding pricing may continue to cause temporary delays in the procurement of equipment needed for projects.

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 widespread adoption of our Solaron inverter product in North America and Europe, this increase was also driven by our acquisition of PV Powered on May 3, 2010.

### *GROSS PROFIT*

Our gross profit was \$205.2 million or 39.7% of revenue in 2011 compared to \$199.2 million or 43.4% of revenue in 2010. The increase in absolute dollars is due to the overall growth in production and sales in 2011, a full year of sales from our acquisition of PV Powered and increased leverage of factory overhead, as well as, reduced warranty costs resulting from improved quality and lower warranty claims. The decrease in gross margin as a percentage of sales is the result of a shift in the mix of products including a higher percentage of revenue from our Solar Energy product line, which traditionally has lower gross margins.

Gross profit was \$199.2 million, or 43.4% of revenue in 2010 and \$49.8 million, or 30.8% of revenue, in 2009. 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.

### *OPERATING EXPENSE*

The following table summarizes our operating expenses as a percentage of sales for the years ended 2011, 2010 and 2009:

	Years Ended December 31,					
	2011		2010		2009	
	(in thousands)					
Research and development	\$ 64,984	12.6%	\$ 56,604	12.3%	\$ 41,132	25.4%
Selling, general, and administrative	79,722	15.4%	74,543	16.3%	38,040	23.5%
Impairment of goodwill	—	—%	—	—%	63,260	39.1%
Amortization of intangible assets	3,852	0.7%	2,864	0.6%	122	0.1%
Restructuring charges	7,348	1.4%	—	—%	4,376	2.7%
Total operating expenses	\$ 155,906	30.1%	\$ 134,011	29.2%	\$ 146,930	90.8%

Operating expenses increased in 2011 due to the purchase of PV Powered in 2010 and increased spending in our production facilities in 2010 carried over into the first half of 2011. Demand in the markets we serve declined significantly in the second half of 2011. As a result, we initiated a plan to re-align our business to be closer to our customers and improve our time to market. These initiatives included headcount reductions, facilities closures, and asset impairments. The first phase of these initiatives occurred late in the year, therefore the reductions in spending were not fully realized in 2011 but are expected to save approximately \$12.0 million annually. The second phase of the initiatives will occur over the next 9 to 15 months. Once complete, the two phases of the plan are expected to result in annual savings in excess of \$20.0 million.

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 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 2010 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.

#### *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.

Research and development expenses for the twelve months ended December 31, 2011 increased \$8.4 million from the same period in 2010. The increase is primarily the result of a full year of expenses for PV Powered. We continued to invest in product development in both the Thin Film and Solar Energy businesses to meet customer needs. The strategic initiatives announced in September 2011 involved re-aligning our research and development activities to be closer to our customers. These initiatives included headcount reductions which will reduce future research and development expenses.

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.

#### *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.

Selling general and administrative ("SG&A") expenses increased \$5.2 million in the twelve months ended December 31, 2011 as compared to the same period in 2010. The increase is primarily due to a full year of expenses for employees added through the acquisition of PV Powered combined with an increase in bad debt expense, which was partially offset by significantly lower incentive expenses in 2011 based on a decline in company performance in the second half of the year.

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 through the acquisition.

### *Goodwill Impairment*

We perform a goodwill impairment analysis annually as of October 31, and whenever events or changes in circumstances indicate that the carrying value of goodwill may not be recoverable. In September 2011, the FASB issued ASU 2011-8 *Intangibles — Goodwill and Other* which allows an assessment of qualitative factors in determining if it is more likely than not that goodwill is impaired. If this assessment indicates that it is more likely than not that goodwill is impaired the next step of impairment testing compares the fair value of a reporting unit to its carrying value. Goodwill would be impaired if the resulting implied fair value of goodwill was less than the recorded carrying value of the goodwill. We adopted the new guidance for our annual impairment test in 2011 as allowed by the ASU, and therefore, performed an assessment of qualitative factors for our annual impairment test in 2011 resulting in the conclusion that there is no impairment of goodwill. The qualitative factors used in our assessment include macroeconomic conditions, industry and market conditions, cost factors, and overall financial performance of our solar inverter business.

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, 2011 resulted from the acquisition of PV Powered.

### *Amortization Expense*

Amortization expense was \$3.9 million for the twelve months ended December 31, 2011, compared to \$2.9 million for the same period ending December 31, 2010 and \$0.1 million for the same period ending December 31, 2009. The increase of \$1.0 million in 2011 is due to a full year of amortization as compared to a partial year in 2010 on \$51.3 million of amortizable assets acquired with the purchase of PV Powered. Amortization expense in 2010 included expense for the period May 3, 2010 through December 31, 2010. See Note 11 — *Intangible Assets* to our Consolidated Financial Statements for additional information on intangible assets and related future amortization.

### *Restructuring Charges*

In September 2011, we announced several initiatives designed to realign our manufacturing and research and development activities in order to foster growth and enhance profitability. These initiatives are designed to align research and development activities with the location of our customers and reduce product costs for the Solar Energy business. As part of this plan, we have reduced the global workforce by approximately 202 people or 12.1% of the workforce, begun consolidation of our facilities by terminating a lease of office and research and development space, and recording impairments for assets no longer in use due to the restructuring of our business. These activities resulted in \$7.3 million of charges in 2011. Over the next 9 to 15 months, we will continue to evaluate our cost structure as we close facilities and relocate certain functions. We estimate these initiatives will result in additional charges of approximately \$4.0 million to \$8.0 million.

During 2008 and 2009 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.

#### *Other Income*

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

Interest income for the twelve month periods ending December 31, 2011, 2010, and 2009 was \$0.2 million, \$0.5 million, and \$1.4 million, respectively.. The consistent decrease was the result of much lower interest rates available in financial markets in 2011 and 2010 as compared to 2009.

Other income, net was \$1.0 million in 2011, \$1.7 million in 2010 and a \$0.5 million loss in 2009. The decrease in 2011 as compared to 2010 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. The revenue related to this program declined in 2011 as the project in process was completed.

#### *Provision for Income Taxes*

We recorded a 2011 income tax provision of \$13.6 million which consisted of \$13.7 million of U.S. federal and state income taxes and \$0.1 million of foreign jurisdiction tax benefit. The shift in tax expense between domestic and foreign, as compared to 2010, was the result of profitability in our Solar Energy business unit, which is primarily domestic, and foreign losses related to start-up expenses and loss true ups in certain jurisdictions.

During 2010, we were profitable in most of 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.

We recorded a 2009 income tax provision of \$6.6 million consisting of \$6.3 million foreign taxes, \$1.0 million of federal income tax, and \$0.7 million benefit for state income taxes. The U.S. federal income tax expense consisted of \$3.6 million of tax expense related to reserves for uncertain tax positions, offset by \$2.6 million of federal income tax benefit.

Our future effective income tax rate depends on various factors, such as changes in tax laws, regulations, accounting principles, or interpretations thereof; and the geographic composition of our pre-tax income. We carefully monitor these factors and adjust our effective income tax rate accordingly.

#### *Discontinued Operations*

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 \$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.

## 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, 2011. 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.

	Quarter Ended							
	Dec. 31, 2011	September 30, 2011	Jun. 30, 2011	Mar. 31, 2011	Dec. 31, 2010	September 30, 2010	Jun. 30, 2010	Mar. 31, 2010
	(In thousands, except per share data)							
Sales	\$ 112,495	\$ 128,498	\$ 138,154	\$ 137,652	\$ 148,653	\$ 140,966	\$ 100,107	\$ 69,687
Gross Profit	38,888	48,847	55,377	62,045	64,743	60,690	44,559	29,207
Restructuring	4,229	3,119	—	—	—	—	—	—
Operating income (loss)	(3,098)	10,674	17,318	24,357	23,962	22,296	13,094	5,836
Income (loss) from continuing operations, net of income taxes	(2,595)	7,171	13,512	18,766	19,730	17,557	11,457	4,850
Income (loss) from discontinued operations, net of income taxes	(175)	(579)	74	140	11,678	2,392	2,162	1,367
Net income (loss)	(2,770)	6,592	13,586	18,906	31,408	19,949	13,619	6,217
<b>Earnings per Share:</b>								
<b>Continuing Operations:</b>								
Basic earnings (loss) per share	\$ (0.06)	\$ 0.16	\$ 0.31	\$ 0.43	\$ 0.46	\$ 0.41	\$ 0.27	\$ 0.12
Diluted earnings (loss) per share	\$ (0.06)	\$ 0.16	\$ 0.31	\$ 0.43	\$ 0.45	\$ 0.40	\$ 0.26	\$ 0.11
<b>Discontinued Operations:</b>								
Basic earnings (loss) per share	\$ —	\$ (0.01)	\$ —	\$ —	\$ 0.27	\$ 0.06	\$ 0.05	\$ 0.03
Diluted earnings (loss) per share	\$ —	\$ (0.01)	\$ —	\$ —	\$ 0.27	\$ 0.05	\$ 0.05	\$ 0.03
<b>Net Income (Loss):</b>								
Basic earnings (loss) per share	\$ (0.06)	\$ 0.15	\$ 0.31	\$ 0.44	\$ 0.73	\$ 0.46	\$ 0.32	\$ 0.15
Diluted earnings (loss) per share	\$ (0.06)	\$ 0.15	\$ 0.31	\$ 0.43	\$ 0.72	\$ 0.45	\$ 0.31	\$ 0.15

	Quarter Ended							
	Dec. 31, 2011	September 30, 2011	Jun. 30, 2011	Mar. 31, 2011	Dec. 31, 2010	September 30, 2010	Jun. 30, 2010	Mar. 31, 2010
<b>Percentage of Sales:</b>								
Sales	100.0 %	100.0 %	100.0 %	100.0 %	100.0 %	100.0 %	100.0 %	100.0 %
Gross Profit	34.6 %	38.0 %	40.1 %	45.1 %	43.6 %	43.1 %	44.5 %	41.9 %
Restructuring	3.8 %	2.4 %	— %	— %	— %	— %	— %	— %
Operating income (loss)	(2.8) %	8.3 %	12.5 %	17.7 %	16.1 %	15.8 %	13.1 %	8.4 %
Income (loss) from continuing operations, net of income taxes	(2.3) %	5.6 %	9.8 %	13.6 %	13.3 %	12.5 %	11.4 %	7.0 %
Income (loss) from discontinued operations, net of income taxes	(0.2) %	(0.5) %	0.1 %	0.1 %	7.9 %	1.7 %	2.2 %	2.0 %
Net income (loss)	(2.5) %	5.1 %	9.8 %	13.7 %	21.1 %	14.2 %	13.6 %	8.9 %

## 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 currently have no line of credit or other external sources of liquidity although we may seek external sources of liquidity from time to time.

At December 31, 2011, we had \$143.2 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.

## CASH FLOWS

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

	Years Ended December 31,		
	2011	2010	2009
	(In thousands)		
Net cash provided by operating activities	\$ 38,095	\$ 18,344	\$ 9,190
Net cash provided by (used in) investing activities	(34,724)	(16,710)	12,958
Net cash provided by (used in) financing activities	(17,092)	1,376	(3,395)
Effect of currency translation on cash	446	(5,202)	(2,095)
Increase (decrease) in cash and cash equivalents	(13,275)	(2,192)	16,658
Cash and cash equivalents, beginning of the period	130,914	133,106	116,448
Cash and cash equivalents, end of the period	<u>\$ 117,639</u>	<u>\$ 130,914</u>	<u>\$ 133,106</u>

### 2011 CASH FLOWS COMPARED TO 2010

#### *Net cash provided by operating activities*

Net cash provided by operating activities for the twelve months ended December 31, 2011 was \$38.1 million, compared to \$18.3 million for the same period ended December 31, 2010. The increase of \$19.8 million in net cash flows from operating activities is primarily due to the collection of accounts receivable on increased sales in 2011 partially offset by the payment of bonuses accrued at December 31, 2010.

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

Net cash used in investing activities for the twelve months ended December 31, 2011 was \$34.7 million, an increase in cash used of \$18.0 million from the prior year. The additional cash used for investing activities in 2011 is the result of an increase in the purchases of marketable securities in 2011 due to higher levels of cash available for investment. Investments in marketable securities used \$15.8 million in 2011 as compared to providing \$34.5 million in 2010 which, combined with the \$43.3 million of cash received from the sale of our gas flow control business, was used to fund our \$75.6 million cash outlay for the acquisition of PV Powered in 2010.

Capital expenditures in 2011 were relatively flat compared to 2010 and included the expansion of production capacity for solar inverters and additions for test equipment related to research and development activities. We expect to fund future capital expenditures with cash generated from operations.

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

Net cash used in financing activities in the twelve months ended December 31, 2011 was \$17.1 million, an \$18.5 million change from the cash provided by financing activities of \$1.4 million in the same period of 2010. In November 2011 we announced a \$75.0 million share repurchase program, of which \$17.9 million of cash was used to repurchase 1.7 million shares through the end of 2011. The repurchase program will continue into 2012 although there is no minimum number of shares that must be repurchased and the program may be suspended or discontinued at any time. The exercise of stock options provided \$2.0 million of cash in 2011 as compared to \$1.4 million in 2010.

### 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 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.

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 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 from 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.

### *Effect of currency translation on cash*

The effect of foreign currency translations on cash changed \$5.6 million to a \$0.4 million positive impact for the year ended December 31, 2011 compared to a \$5.2 million negative impact for the year ended December 31, 2010. 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 functional currencies of our worldwide operations primarily include U.S. dollar (“USD”), Japanese Yen (“JPY”), Chinese Yuan (“CNY”), New Taiwan Dollar (“TWD”), South Korean Won (“KRW”), 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, 2011, 2010 and 2009 are as follows:

<u>From</u>	<u>To</u>	<u>Years Ended December 31,</u>		
		<u>2011</u>	<u>2010</u>	<u>2009</u>
CNY	USD	4.7%	3.4%	(0.1)%
EUR	USD	(3.2)%	(7.2)%	3.5%
JPY	USD	5.0%	13.7%	(1.7)%
KRW	USD	(3.4)%	3.0%	9.1%
TWD	USD	(4.0)%	9.7%	2.4%
GBP	USD	(0.2)%	(4.3)%	11.0%

### **Off Balance Sheet Arrangements**

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

### **Contractual Obligations**

The following table sets forth our future payments due under contractual obligations as of December 31, 2011:

Contractual Obligations:	Total	Less than	More than 5		
		1 year	1-3 years	3-5 years	years
(In thousands)					
Capital lease obligations	\$ 234	\$ 109	\$ 125	\$ —	\$ —
Operating lease obligations	\$ 28,001	\$ 6,842	\$ 7,843	\$ 4,794	\$ 8,522
Purchase obligations	59,771	59,771	—	—	—
	\$ 88,006	\$ 66,722	\$ 7,968	\$ 4,794	\$ 8,522

As of December 31, 2011, we have \$16.4 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 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, 2011, our investments consisted primarily of treasury bills, certificates of deposit, corporate bonds, agency bonds and institutional money markets, all with maturity of less than 2 years.

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 \$0.3 million.

#### **Foreign Currency Exchange Rate Risk**

We are impacted by changes in foreign currency exchange rates through sales and purchasing transactions when we sell products 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, KRW, TWD, 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 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. In 2011 we entered into foreign currency forward contracts to manage the exchange rate risk associated with intercompany debt denominated in nonfunctional currencies. 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.



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

### **INDEX TO CONSOLIDATED FINANCIAL STATEMENTS**

Reports of Grant Thornton LLP, Independent Registered Public Accounting Firm	40
Consolidated Balance Sheets	42
Consolidated Statements of Operations	43
Consolidated Statements of Stockholders' Equity	44
Consolidated Statements of Cash Flows	45
Notes to Consolidated Financial Statements	46

## REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

Board of Directors and Shareholders  
Advanced Energy Industries, Inc.

We have audited the accompanying consolidated balance sheets of Advanced Energy Industries, Inc. (a Delaware corporation) and subsidiaries (the “Company”) as of December 31, 2011 and 2010, and the related consolidated statements of operations, stockholders’ equity, and cash flows for each of the three years in the period ended December 31, 2011. 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, 2011 and 2010, and the results of their operations and their cash flows for each of the three years in the period ended December 31, 2011, 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), the Company’s internal control over financial reporting as of December 31, 2011, 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 1, 2012, expressed an unqualified opinion.

/s/ GRANT THORNTON LLP

Denver, Colorado  
March 2, 2012

## 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' (the "Company") internal control over financial reporting as of December 31, 2011, 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, 2011 ("Management's Report"). Our responsibility is to express an opinion on the Company's internal control over financial reporting based on our audit.

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, 2011, 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, 2011 and 2010, and the related consolidated statements of operations, stockholders' equity, and cash flows for each of the three years in the period ended December 31, 2011, and our report dated March 1, 2012, expressed an unqualified opinion.

/s/ GRANT THORNTON LLP

Denver, Colorado  
March 2, 2012

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

	<b>December 31,</b>	
	<b>2011</b>	<b>2010</b>
<b>ASSETS</b>		
<b>CURRENT ASSETS:</b>		
Cash and cash equivalents	\$ 117,639	\$ 130,914
Marketable securities	25,567	9,640
Accounts receivable, net of allowances of \$6,796 and \$3,440, respectively	132,485	119,893
Inventories, net	80,283	77,593
Deferred income tax assets	9,014	7,510
Income taxes receivable	13,826	6,061
Other current assets	11,672	10,156
Total current assets	390,486	361,767
Property and equipment, net	42,338	34,569
Deposits and other	8,959	8,874
Goodwill	46,515	48,360
Other intangible assets, net	43,438	48,421
Deferred income tax assets	1,642	3,166
Total assets	<u>\$ 533,378</u>	<u>\$ 505,157</u>
<b>LIABILITIES AND STOCKHOLDERS' EQUITY</b>		
<b>CURRENT LIABILITIES:</b>		
Accounts payable	\$ 44,828	\$ 56,185
Income taxes payable	3,310	3,602
Accrued payroll and employee benefits	9,184	23,202
Accrued warranty expense	8,433	7,144
Other accrued expenses	10,800	5,389
Customer deposits	14,689	6,803
Total current liabilities	91,244	102,325
Deferred income tax liabilities	6,475	5,155
Uncertain tax positions	16,404	14,176
Accrued warranty expense	6,286	5,805
Other long-term liabilities	5,630	3,728
Total liabilities	126,039	131,189
Commitments and contingencies (Note 16)	—	—
<b>STOCKHOLDERS' EQUITY:</b>		
Preferred stock, \$0.001 par value, 1,000 shares authorized, none issued and outstanding	—	—
Common stock, \$0.001 par value, 70,000 shares authorized; 41,956 and 43,330 issued and outstanding, respectively	42	43
Additional paid-in capital	254,003	258,398
Retained earnings	124,767	88,453
Accumulated other comprehensive income	28,527	27,074
Total stockholders' equity	407,339	373,968
Total liabilities and stockholders' equity	<u>\$ 533,378</u>	<u>\$ 505,157</u>

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

**ADVANCED ENERGY INDUSTRIES, INC.**  
**Consolidated Statements of Operations**  
(In thousands, except per share amounts)

	<b>Years Ended December 31,</b>		
	<b>2011</b>	<b>2010</b>	<b>2009</b>
SALES	\$ 516,799	\$ 459,414	\$ 161,846
COST OF SALES	311,642	260,215	112,056
GROSS PROFIT	205,157	199,199	49,790
OPERATING EXPENSES:			
Research and development	64,984	56,604	41,132
Selling, general, and administrative	79,722	74,543	38,040
Impairment of goodwill	—	—	63,260
Amortization of intangible assets	3,852	2,864	122
Restructuring charges	7,348	—	4,376
Total operating expenses	155,906	134,011	146,930
OPERATING INCOME (LOSS)	49,251	65,188	(97,140)
Interest income	169	539	1,371
Other income, net	1,048	1,682	539
Total other income	1,217	2,221	1,910
Income (loss) from continuing operations before income taxes	50,468	67,409	(95,230)
Provision for income taxes	13,614	13,816	6,582
INCOME (LOSS) FROM CONTINUING OPERATIONS, NET OF INCOME TAXES	36,854	53,593	(101,812)
Gain on sale of discontinued operations, net of income taxes	—	12,531	—
Income (loss) from discontinued operations, net of income taxes	(540)	5,068	(893)
INCOME (LOSS) FROM DISCONTINUED OPERATIONS, NET OF INCOME TAXES	(540)	17,599	(893)
<b>NET INCOME (LOSS)</b>	<b>\$ 36,314</b>	<b>\$ 71,192</b>	<b>\$ (102,705)</b>
Basic weighted-average common shares outstanding	43,465	42,862	41,966
Diluted weighted-average common shares outstanding	43,954	43,419	41,966
<b>EARNINGS PER SHARE:</b>			
CONTINUING OPERATIONS:			
BASIC EARNINGS (LOSS) PER SHARE	\$ 0.85	\$ 1.25	\$ (2.43)
DILUTED EARNINGS (LOSS) PER SHARE	\$ 0.84	\$ 1.23	\$ (2.43)
DISCONTINUED OPERATIONS			
BASIC EARNINGS (LOSS) PER SHARE	\$ (0.01)	\$ 0.41	\$ (0.02)
DILUTED EARNINGS (LOSS) PER SHARE	\$ (0.01)	\$ 0.41	\$ (0.02)
<b>NET INCOME (LOSS):</b>			
BASIC EARNINGS (LOSS) PER SHARE	\$ 0.84	\$ 1.66	\$ (2.45)
DILUTED EARNINGS (LOSS) PER SHARE	\$ 0.83	\$ 1.64	\$ (2.45)

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

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

	<b>Common Stock Shares</b>	<b>Common Stock Amount</b>	<b>Additional Paid- in Capital</b>	<b>Retained Earnings</b>	<b>Accumulated Other Comprehensive Income</b>	<b>Total Stockholders' Equity</b>
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 stock-based compensation	—	—	3,818	—	—	3,818
Japan cash repatriation	—	—	(246)	—	—	(246)
Comprehensive income:						
Equity adjustment from foreign currency translation	—	—	—	—	(4,985)	(4,985)
Unrealized holding losses	—	—	—	—	(9)	(9)
Net loss	—	—	—	(102,705)	—	(102,705)
Total comprehensive income (loss)						(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 Powered	998	1	14,689	—	—	14,690
Stock-based compensation	—	—	8,501	—	—	8,501
Excess tax benefit from stock-based compensation	—	—	188	—	—	188
Comprehensive income:						
Equity adjustment from foreign currency translation	—	—	—	—	(343)	(343)
Unrealized holding gains	—	—	—	—	9	9
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
Stock issued from equity plans	370	—	1,981	—	—	1,981
Stock-based compensation	—	—	12,529	—	—	12,529
Excess tax from stock-based compensation	—	—	(1,011)	—	—	(1,011)
Stock buyback	(1,744)	(1)	(17,894)	—	—	(17,895)
Comprehensive income:						
Equity adjustment from foreign currency translation	—	—	—	—	1,474	1,474
Unrealized holding gain	—	—	—	—	(21)	(21)
Net income	—	—	—	36,314	—	36,314
Total comprehensive income	—	—	—	—	—	37,767
Balances, December 31, 2011	41,956	\$42	\$ 254,003	\$ 124,767	\$ 28,527	\$ 407,339

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

**ADVANCED ENERGY INDUSTRIES, INC.**  
**Consolidated Statements of Cash Flows**  
(In thousands)

	<b>Years Ended December 31,</b>		
	<b>2011</b>	<b>2010</b>	<b>2009</b>
<b>CASH FLOWS FROM OPERATING ACTIVITIES:</b>			
Net income (loss)	\$ 36,314	\$ 71,192	\$ (102,705)
Adjustments to reconcile net income (loss) to net cash provided by operating activities, net of assets and liabilities acquired:			
Depreciation and amortization	14,525	10,736	9,014
Goodwill impairment charge	—	—	63,260
Stock-based compensation expense	12,529	8,501	5,766
Provision (benefit) for deferred income taxes	3,363	5,284	(5,283)
Restructuring charges	7,348	—	4,376
Net gain on disposal of gas flow control business	—	(12,531)	—
Net loss on disposal of assets	1,629	—	323
Changes in operating assets and liabilities, net of assets acquired:			
Accounts receivable	(12,135)	(62,136)	7,053
Inventories	(3,465)	(41,299)	11,175
Other current assets	1,689	(6,318)	(1,573)
Accounts payable	(10,813)	26,521	15,797
Other current liabilities and accrued expenses	(2,834)	27,163	1,726
Income taxes	(8,087)	(9,188)	5,364
Non-current assets	(1,968)	469	(4,785)
Non-current liabilities	—	(50)	(318)
Net cash provided by operating activities	<u>38,095</u>	<u>18,344</u>	<u>9,190</u>
<b>CASH FLOWS FROM INVESTING ACTIVITIES:</b>			
Purchases of marketable securities	(31,598)	(109,516)	(247,017)
Proceeds from sale of marketable securities	15,761	144,055	265,586
Proceeds from sale of gas flow control business	—	43,260	—
Purchase of PV Powered, Inc., net of cash acquired	—	(75,577)	—
Purchases of property and equipment	(18,887)	(18,932)	(5,611)
Net cash provided by (used in) investing activities	<u>(34,724)</u>	<u>(16,710)</u>	<u>12,958</u>
<b>CASH FLOWS FROM FINANCING ACTIVITIES:</b>			
Payments on capital lease obligations	(167)	(209)	(85)
Purchase and retirement of treasury stock	(17,895)	—	—
Proceeds from exercise of stock options	1,981	1,397	508
Excess tax from stock-based compensation deduction	(1,011)	188	(3,818)
Net cash provided by (used in) financing activities	<u>(17,092)</u>	<u>1,376</u>	<u>(3,395)</u>
<b>EFFECT OF CURRENCY TRANSLATION ON CASH</b>	<u>446</u>	<u>(5,202)</u>	<u>(2,095)</u>
<b>INCREASE (DECREASE ) IN CASH AND CASH EQUIVALENTS</b>	<u>(13,275)</u>	<u>(2,192)</u>	<u>16,658</u>
CASH AND CASH EQUIVALENTS, beginning of period	<u>130,914</u>	<u>133,106</u>	<u>116,448</u>
<b>CASH AND CASH EQUIVALENTS, end of period</b>	<u><u>\$ 117,639</u></u>	<u><u>\$ 130,914</u></u>	<u><u>\$ 133,106</u></u>
<b>SUPPLEMENTAL DISCLOSURE OF CASH FLOW INFORMATION:</b>			
Cash paid for interest	\$ 74	\$ 55	\$ 16
Cash paid for income taxes	23,254	25,182	6,355
Cash received for refunds of income taxes	7,430	1,687	—
Cash held in banks outside the United States	67,426	22,032	66,148
<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.

## 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.

**Foreign Currency Translation** — The functional currency of our foreign subsidiaries is their local currency, with the exception of our manufacturing facility in Shenzhen, The People’s 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, 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.



# ADVANCED ENERGY INDUSTRIES, INC.

## NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)

**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, 2011, our accounts receivable from Hitachi Metals, Ltd. were \$21.5 million comprising 16.2% of our total accounts receivable. At December 31, 2010, our accounts receivable from ULVAC, Inc. were \$13.0 million comprising 10.5% of our total accounts receivable. No other customer balance exceeded 10% of our total accounts receivable balance at December 31, 2011 and December 31, 2010. 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.

Changes in allowance for doubtful accounts are summarized as follows:

	<b>Years Ended December 31,</b>		
	<b>2011</b>	<b>2010</b>	<b>2009</b>
	<b>(In thousands)</b>		
Balance — beginning of period	\$ 3,440	\$ 1,975	\$ 971
Additions — charged to expense	4,806	1,814	2,822
Deductions — write-offs, net of recoveries	(1,450)	(349)	(1,818)
Balance — end of period	<u>\$ 6,796</u>	<u>\$ 3,440</u>	<u>\$ 1,975</u>

**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

## ADVANCED ENERGY INDUSTRIES, INC.

### NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)

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

Due to the restructuring plan announced in 2011, we determined there were indicators of impairment related to one research and development project that was recorded as in-process research and development in conjunction with the acquisition of PV Powered. This project was abandoned as part of the restructuring plan and thus resulted in an impairment of the intangible asset recorded. In December 2011 we recorded an impairment of \$1.1 million as part of our restructuring charges related to this project.

The estimation of useful lives and expected cash flows requires 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.

In September 2011, the Financial Accounting Standards Board (“FASB”) issued Accounting Standards Update (“ASU”) 2011-8 *Intangibles — Goodwill and Other* which allows an assessment of qualitative factors in determining if it is more likely than not that goodwill is impaired. If this assessment indicates that it is more likely than not that goodwill is impaired, the next step of impairment testing compares the fair value of a reporting unit to its carrying value. Goodwill would be impaired if the resulting implied fair value of goodwill was less than the recorded carrying value of the goodwill. We adopted the new guidance related to goodwill impairment testing in 2011 and therefore performed an assessment of qualitative factors for our annual impairment test as of October 31, 2011. The qualitative factors assessed include macroeconomic conditions, industry and market conditions, cost factors, and overall financial performance of our solar inverter business. This assessment resulted in the conclusion that it is not more likely than not that our goodwill is impaired.

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 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 Solar Energy products, we provide installation, support, and services after the product has been shipped. For arrangements containing these additional elements, we allocate revenue based on vendor specific objective evidence of the selling price of each individual element of the arrangement. As we also sell these additional elements separately, the evidence is our selling price for those elements when sold separately. We defer the revenue of any undelivered elements until the undelivered element is delivered. 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.

## ADVANCED ENERGY INDUSTRIES, INC.

### NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)

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.

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 related to extended warranties totaling \$8.0 million as of December 31, 2011 and \$5.9 million as of December 31, 2010, 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, a current liability, and then recognized as revenue when appropriate based upon the revenue recognition criteria discussed earlier in this section. As of December 31, 2011 and December 31, 2010 the total amount of customer deposits was \$14.7 million and \$6.8 million, respectively. We do not offer price protection to customers, or allow returns, unless covered by our normal policy for repair of defective products.

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 all non-performance based 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 rates 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 the historical daily closing price of our stock over a period equivalent to the expected life of the options.

During 2011 we granted non-qualified stock options to our Chief Executive Officer that will vest based on the achievement of certain stock price targets. To estimate the fair value of these stock options on the grant date we used the Monte Carlo simulation method which is also affected by our stock price and assumptions regarding multiple variables.

## 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 period. 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 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.

### 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.

# ADVANCED ENERGY INDUSTRIES, INC.

## NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)

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. As of the time of the acquisition, its inverters ranged in size from 30 kilowatts (“kW”) to two megawatts for the commercial market and one kW to five kW for the residential market, all of which had market-leading efficiency ratings.

The PV Powered product line will continue to be manufactured in Bend, Oregon although certain sub-assembly manufacturing will be moved to our Shenzhen production facility. The acquisition of PV Powered enables us to offer the solar inverter market a more complete suite of products in wide power ranges 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 was final as of June 30, 2011.

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	<u>14,690</u>
Total fair value of consideration transferred	<u>\$ 90,267</u>

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	4,591
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	<u>(2,739)</u>
	(7,534)

### Amortizable intangible assets:

Trademarks	5,277
Technology	28,208
In process research and development	14,868
Customer relationships	2,213
Backlog	<u>720</u>
Total amortizable intangible assets	<u>51,286</u>
Total identifiable net assets	43,752
Goodwill	<u>46,515</u>
Total fair value of consideration transferred	<u>\$ 90,267</u>

**ADVANCED ENERGY INDUSTRIES, INC.**

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

A summary of the intangible assets acquired, amortization method and estimated useful lives as of May 3, 2010 follows (in thousands):

	<u>Amount</u>	<u>Amortization Method</u> (In thousands)	<u>Useful Life</u>
Trademarks	\$ 5,277	Accelerated	10 years
Technology	28,208	Accelerated	7 years
In process research and development	14,868	Accelerated	—
Customer relationships	2,213	Accelerated	7 years
Backlog	720	Straight-line	6 months
	<u>\$ 51,286</u>		

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

The results of PV Powered operations are included in our Consolidated Statements of Operations for 2010 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:

	<u>(Unaudited)</u>	
	<u>Years Ended December 31,</u>	
	<u>2010</u>	<u>2009</u>
	<u>(In thousands, except per share data)</u>	
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.

**ADVANCED ENERGY INDUSTRIES, INC.**

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

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. The agreement was amended in October 2011 to extend it through March 2012.

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 income taxes, in our Consolidated Statements of Operations.

Operating results of discontinued operations are as follows:

	<b>Years Ended December 31,</b>		
	<b>2011</b>	<b>2010</b>	<b>2009</b>
	<b>(In Thousands)</b>		
Sales	\$ 27,823	\$ 51,204	\$ 24,549
Cost of sales	27,671	38,327	19,972
Gross profit	<u>152</u>	<u>12,877</u>	<u>4,577</u>
Operating expenses:			
Research and development	8	1,922	2,130
Selling, general, and administrative	862	3,301	3,444
Amortization of intangible assets	—	246	491
Total operating expenses	<u>870</u>	<u>5,469</u>	<u>6,065</u>
Operating income (loss) from discontinued operations	(718)	7,408	(1,488)
Other income (loss)	(26)	—	—
Gain on sale of net assets of discontinued operations	—	14,249	—
Income (loss) from discontinued operations before income taxes	<u>(744)</u>	<u>21,657</u>	<u>(1,488)</u>
Provision for income taxes:			
Income taxes on income from discontinued operations	(204)	2,340	(595)
Income taxes on gain on sale of net assets of discontinued operations	—	1,718	—
Total provision for income taxes	<u>(204)</u>	<u>4,058</u>	<u>(595)</u>
Income (loss) from discontinued operations, net of income taxes	<u><u>\$ (540)</u></u>	<u><u>\$ 17,599</u></u>	<u><u>\$ (893)</u></u>

**NOTE 3. INCOME TAXES**

The provision for income taxes for the years ended December 31, 2011, 2010, and 2009 are as follows:

	<b>Years Ended December 31,</b>		
	<b>2011</b>	<b>2010</b>	<b>2009</b>
	<b>(In thousands)</b>		
Provision for Income Taxes:			
Federal	\$ 12,625	\$ 6,445	\$ 1,018
State and local	1,116	1,194	(697)
Foreign taxes	<u>(127)</u>	<u>6,177</u>	<u>6,261</u>
	<u><u>\$ 13,614</u></u>	<u><u>\$ 13,816</u></u>	<u><u>\$ 6,582</u></u>
Current	\$ 10,251	\$ 7,170	\$ 11,865
Deferred	<u>3,363</u>	<u>6,646</u>	<u>(5,283)</u>
	<u><u>\$ 13,614</u></u>	<u><u>\$ 13,816</u></u>	<u><u>\$ 6,582</u></u>

**ADVANCED ENERGY INDUSTRIES, INC.**

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

The following reconciles our effective tax rate on income from continuing operations to the federal statutory rate for the years ended December 31, 2011, 2010, and 2009:

	<b>Years Ended December 31,</b>		
	<b>2011</b>	<b>2010</b>	<b>2009</b>
	<b>(In thousands)</b>		
Income taxes per federal statutory rate	\$ 17,664	\$ 23,566	\$ (33,851)
State income taxes, net of federal deduction	777	849	411
Intellectual property transfer	—	—	33,130
Nondeductible goodwill impairment	—	—	22,140
Stock Compensation	1,150	300	455
Effect of foreign taxes at different rates	(4,628)	(5,497)	901
Change in valuation allowance	—	—	(18,360)
Repatriation of foreign earnings, net of foreign tax credits	—	(6,690)	—
Tax Credits	(1,432)	(2,003)	(621)
Other permanent items, net	83	3,291	2,377
	<u>\$ 13,614</u>	<u>\$ 13,816</u>	<u>\$ 6,582</u>

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

	<b>December 31,</b>	
	<b>2011</b>	<b>2010</b>
	<b>(In thousands)</b>	
Current:		
Employee bonuses and commissions	\$ 40	\$ 823
Warranty reserve	3,111	2,649
Bad debt reserve	755	913
Vacation accrual	636	966
Restructuring	471	(117)
Excess and obsolete inventory	4,532	4,182
Deferred Revenue	2,915	1,288
Unrepatriated Earnings	(2,139)	(2,139)
Other	725	612
Valuation allowance	(2,279)	(1,793)
Total current, net	<u>8,767</u>	<u>7,384</u>
Long-term:		
Net operating loss and tax credit carryforward	11,898	14,419
Depreciation and amortization, net	(20,829)	(17,136)
Other	6,808	3,924
Valuation allowance	(2,711)	(3,197)
Total long-term, net	<u>(4,834)</u>	<u>(1,990)</u>
Total deferred tax assets, net	<u>\$ 3,933</u>	<u>\$ 5,394</u>

As of December 31, 2011, we had gross U.S. federal net operating loss, foreign tax credit, and alternative minimum tax credit carryforwards of approximately \$16.8 million, \$0.2 million, and \$2.9 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 provisions of the U.S. tax code which restricts their utilization in the future. A valuation allowance of \$5.0 million has been provided on a portion of the federal net operating losses as realization of these benefits is not expected.

The federal net operating losses expire at various dates through December 31, 2030. The foreign tax credit carryforward expires on December 31, 2021. As of December 31, 2011, we had a gross foreign net operating loss carryforward of \$2.8 million which may be available to offset future foreign income tax liabilities. The foreign net operating loss carryforward generated in Canada of \$2.6 million expires on December 31, 2031. The alternative minimum tax credit carryforward has no expiration date.



# ADVANCED ENERGY INDUSTRIES, INC.

## NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)

We intend to repatriate up to \$30.0 million from Japan during 2012 for which deferred income tax expense of \$2.1 million was recorded in 2010. Other than this planned repatriation, undistributed earnings of foreign subsidiaries are considered to be permanently reinvested and accordingly, no current year provision for U.S. federal and state income taxes or foreign withholding taxes has been recorded. Unrepatriated earnings of approximately \$63.7 million could become subject 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 would be provided for undistributed earnings has not been determined because the hypothetical calculation is not practicable.

The domestic and foreign component of our income (loss) before income taxes for the years ended December 31, 2011, 2010, and 2009 are as follows (in thousands):

	2011	2010	2009
Domestic	\$ 54,339	\$ 47,010	\$ (66,273)
Foreign	(3,871)	20,399	(28,957)
	<u>\$ 50,468</u>	<u>\$ 67,409</u>	<u>\$ (95,230)</u>

### 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):

	2011	2010	2009
Balance at beginning of period	\$ 15,665	\$ 14,987	\$ 13,468
Additions based on tax positions taken during a prior period	—	318	—
Reductions based on tax positions taken during a prior period	—	(21)	(4,190)
Additions based on tax positions taken during the current period	353	381	5,709
Reductions based on tax positions taken during the current period	—	—	—
Reductions related to settlement of tax matters	—	—	—
Reductions related to a lapse of applicable statute of limitations	—	—	—
Balance at end of period	<u>\$ 16,018</u>	<u>\$ 15,665</u>	<u>\$ 14,987</u>

If the \$16.0 million of tax contingencies recorded on our balance sheet reverse, \$7.9 million will affect our effective tax rate. The tax years 2004 through 2011 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, 2011 and 2010. We do not anticipate a material change to the amount of unrecognized tax positions within the next 12 months.

### 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 that would not have been incurred, and the denominator is increased to include the number of additional 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.

# ADVANCED ENERGY INDUSTRIES, INC.

## NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)

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, 2011, 2010, and 2009:

	Years Ended December 31,		
	2011	2010	2009
	(In thousands, except per share data)		
Income (loss) from continuing operations, net of income taxes	\$ 36,854	\$ 53,593	\$ (101,812)
Basic weighted-average common shares outstanding	43,465	42,862	41,966
Assumed exercise of dilutive stock options and restricted stock units	489	557	—
Diluted weighted-average common shares outstanding	43,954	43,419	41,966
Income from Continuing Operations:			
Earnings (loss) per share:			
Basic earnings (loss) per share	\$ 0.85	\$ 1.25	\$ (2.43)
Diluted earnings (loss) per share	\$ 0.84	\$ 1.23	\$ (2.43)

As of December 31, 2011, stock options and restricted stock units of 6.6 million shares were outstanding, of which 4.6 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, 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.

### Stock Buyback

In November 2011, 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 2011, we repurchased and retired 1,744 thousand shares of our common stock for a total of \$17.9 million.

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.

The composition of our marketable securities is as follows:

	December 31,			
	2011		2010	
	Cost	Fair Value	Cost	Fair Value
	(In thousands)			
Commercial paper	\$ 2,395	\$ 2,395	\$ —	\$ —
Treasury bills	—	—	2,003	2,006
Certificates of deposit	8,333	8,326	3,126	3,126
Corporate bonds/notes	7,534	7,523	1,002	1,004
Agency bonds/notes	7,320	7,323	3,503	3,504
Total securities	\$ 25,582	\$ 25,567	\$ 9,634	\$ 9,640

# ADVANCED ENERGY INDUSTRIES, INC.

## NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)

The maturities of our marketable securities available for sale as of December 31, 2011 are as follows:

	<u>Earliest</u>		<u>Latest</u>
Commercial paper	4/26/2012	to	7/23/2012
Certificates of deposit	1/9/2012	to	9/23/2013
Corporate bonds/notes	2/15/2012	to	1/15/2013
Agency Bonds	7/15/2012	to	12/21/2012

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 expired on July 2, 2010 without exercise.

As of December 31, 2011, we do not believe any of the underlying issuers of our marketable securities are presently at risk of default.

### NOTE 6. DERIVATIVE FINANCIAL INSTRUMENTS

We are impacted by changes in foreign currency exchange rates. We manage these risks through the use of derivative financial instruments, primarily forward contracts. During the twelve months ended December 31, 2011, we entered into foreign currency exchange forward contracts to manage the exchange rate risk associated with intercompany debt denominated in nonfunctional currencies. These derivative instruments are not designated as hedges; however, they do offset the fluctuations of our intercompany debt due to foreign exchange rate changes.

The notional amount of foreign currency exchange contracts was \$32.3 million at December 31, 2011 and the fair value of these contracts was immaterial at December 31, 2011. During the twelve months ended December 31, 2011 we recognized \$1.6 million of gains on our foreign currency exchange contracts. These losses were offset by corresponding losses on the related intercompany debt and both are included as a component of other income, net, in our Consolidated Statements of Operations.

We did not enter into foreign currency forward contracts during 2010 or 2009.

### NOTE 7. 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.
- 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.

**ADVANCED ENERGY INDUSTRIES, INC.**

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

**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, 2011, and December 31, 2010. The tables 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, 2011, and December 31, 2010.

<b>December 31, 2011</b>	<b>Level 1</b>	<b>Level 2</b>	<b>Level 3</b>	<b>Total</b>
	<b>(In thousands)</b>			
Commercial paper	\$ —	\$ 2,395	\$ —	\$ 2,395
Certificates of deposit	—	8,326	—	8,326
Corporate bonds/notes	7,523	—	—	7,523
Agency bonds/notes	7,323	—	—	7,323
<b>Total</b>	<b>\$ 14,846</b>	<b>\$ 10,721</b>	<b>\$ —</b>	<b>\$ 25,567</b>

<b>December 31, 2010</b>	<b>Level 1</b>	<b>Level 2</b>	<b>Level 3</b>	<b>Total</b>
	<b>(In thousands)</b>			
Commercial paper	\$ 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
<b>Total</b>	<b>\$ 6,514</b>	<b>\$ 3,126</b>	<b>\$ —</b>	<b>\$ 9,640</b>

We did not have any Level 3 investments or financial liabilities measured at fair value, on a recurring basis, as of December 31, 2011 and December 31, 2010. In the first quarter 2011, we reclassified our investments in certificates of deposit from Level 1 into Level 2. We believe this more appropriately reflects the level of inputs available for valuing these financial instruments. There were no transfers in or out of Level 1, 2, or 3 fair value measurements during the year ended December 31, 2011.

The following table presents the activity in Level 3 instruments during the years ended December 31, 2010:

	<b>ARS</b>	<b>Put Agreement</b>	<b>Total</b>
	<b>(In Thousands)</b>		
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 8. INVENTORIES**

For information regarding the valuation of our inventory refer to Note 1 — *Operations and Summary of Significant Accounting Policies and Estimates*.

Our inventories consisted of:

	<b>December 31,</b>	
	<b>2011</b>	<b>2010</b>
	<b>(In thousands)</b>	
Parts and raw materials	\$ 57,962	\$ 53,755
Work in process	3,708	5,594
Finished goods	18,613	18,244
	<b>\$ 80,283</b>	<b>\$ 77,593</b>

**ADVANCED ENERGY INDUSTRIES, INC.**

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

**NOTE 9. PROPERTY AND EQUIPMENT**

Details of property and equipment are as follows:

	<b>December 31,</b>	
	<b>2011</b>	<b>2010</b>
Buildings and land	\$ 1,647	\$ 1,701
Machinery and equipment	40,126	53,885
Computer and communication equipment	24,097	23,296
Furniture and fixtures	2,648	5,717
Vehicles	464	541
Leasehold improvements	29,680	28,003
Construction in process	6,352	3,996
	<u>105,014</u>	<u>117,139</u>
Less: Accumulated depreciation	<u>(62,676)</u>	<u>(82,570)</u>
	<u>\$ 42,338</u>	<u>\$ 34,569</u>

Depreciation expense recorded in continuing operations for the years ended December 31, 2011, 2010, and 2009 and included in selling, general and administrative expense is as follows:

	<b>Years Ended December 31,</b>		
	<b>2011</b>	<b>2010</b>	<b>2009</b>
	<b>(In thousands)</b>		
Depreciation expense	\$ 10,673	\$ 7,226	\$ 7,818

**NOTE 10. GOODWILL**

The following summarizes the changes in goodwill during the years ended December 31, 2011 and 2010

	<b>December 31,</b>	
	<b>2011</b>	<b>2010</b>
	<b>(In thousands)</b>	
Gross carrying amount (including the effect of changes in exchange rates), beginning of period	\$ 48,360	\$ —
Additions and adjustments	(1,845)	48,360
Impairments	<u>—</u>	<u>—</u>
Gross carrying amount, end of period	<u>\$ 46,515</u>	<u>\$ 48,360</u>

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*. Additions in 2011 were the result of the finalization of purchase accounting and the recording of an increase to the noncurrent deferred tax assets related to pre-acquisition net operating losses of PV Powered.

**NOTE 11. INTANGIBLE ASSETS**

Other intangible assets consisted of the following as of December 31, 2011:

	<b>Gross Carrying Amount</b>	<b>Accumulated Amortization</b>	<b>Net Carrying Amount</b>	<b>Weighted- Average Useful Life in Years</b>
	<b>(In thousands, except weighted-average useful life)</b>			
<b>Amortizable intangibles:</b>				
Technology-based	\$ 37,922	\$ (5,841)	\$ 32,081	7
Trademarks and other	8,210	(875)	7,335	8
Total amortizable intangibles	<u>46,132</u>	<u>(6,716)</u>	<u>39,416</u>	
<b>Non-amortizing intangibles</b>	<u>4,022</u>	<u>—</u>	<u>4,022</u>	
<b>Total intangible assets</b>	<u>\$ 50,154</u>	<u>\$ (6,716)</u>	<u>\$ 43,438</u>	

**ADVANCED ENERGY INDUSTRIES, INC.**

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

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

	<b>Gross Carrying Amount</b>	<b>Accumulated Amortization</b>	<b>Net Carrying Amount</b>	<b>Weighted- Average Useful Life in Years</b>
	<b>(In thousands, except weighted-average useful life)</b>			
<b>Amortizable intangibles:</b>				
Technology-based	\$ 31,552	\$ (2,270)	\$ 29,282	7
Trademarks and other	8,210	(594)	7,616	8
Total amortizable intangibles	39,762	(2,864)	36,898	
<b>Non-amortizing intangibles</b>	11,523	—	11,523	
<b>Total intangible assets</b>	<u>\$ 51,285</u>	<u>\$ (2,864)</u>	<u>\$ 48,421</u>	

Non-amortizing intangibles include assets acquired in a business combination that are used in research and development activities. These assets are considered to have indefinite lives until the completion or abandonment of the associated research and development efforts. During 2011, we completed two of the research and development projects and resulting in the transfer of \$4.4 million of non-amortizing intangibles to amortizing technology-based intangibles. In connection with the restructuring plan begun in September 2011, we determined one of the research and development projects that was in process at the time of acquisition of PV Powered was impaired due to abandonment of the project. The value assigned to that project at the acquisition date and included in the non-amortizing intangibles at the date of acquisition was \$1.1 million. This value was recorded as a restructuring charge in our consolidated statement of operations.

Amortization expense related to intangible assets is as follows:

	<b>Years Ended December 31,</b>		
	<b>2011</b>	<b>2010</b>	<b>2009</b>
	<b>(In thousands)</b>		
Amortization expense	\$ 3,852	\$ 2,864	\$ 122

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 2012 through 2016 and thereafter is as follows:

<b>Year Ending December 31,</b>	
	<b>(In thousands)</b>
2012	\$ 5,598
2013	8,080
2014	8,860
2015	8,408
2016	6,234
Thereafter	6,258
	<u>\$ 43,438</u>

**NOTE 12. WARRANTIES**

Provisions of our sales agreements include product warranties customary to these types of agreements, ranging from 12 months to 10 years following installation. We also offer our Solar Energy customers the option to purchase additional warranty coverage up to 20 years. 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

**ADVANCED ENERGY INDUSTRIES, INC.**

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

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>2011</b>	<b>2010</b>	<b>2009</b>
	<b>(In thousands)</b>		
Balances at beginning of period	\$ 12,949	\$ 7,005	\$ 6,005
Warranty liabilities acquired	—	2,625	—
Increases to accruals related to sales during the period	10,203	10,463	7,143
Warranty expenditures	(8,433)	(7,144)	(6,143)
Balances at end of period	<u>\$ 14,719</u>	<u>\$ 12,949</u>	<u>\$ 7,005</u>

**NOTE 13. STOCK-BASED COMPENSATION**

As of December 31, 2011, 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, 2011, there were 9.6 million shares reserved and 3.0 million shares available for future grant under our stock-based incentive plans.

*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, 2011, 2,513,747 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 \$12.5 million, \$8.5 million, and \$5.8 million for the years ending December 31, 2011, 2010, and 2009, 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 13% for the year ended December 31, 2011, and 12% for each of the years ended December 31, 2010 and 2009.

*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 except as noted below.

During the third quarter of 2011, we granted non-qualified stock options to our Chief Executive Officer that will vest based on the achievement of certain stock price targets. The stock-based compensation cost and derived service periods for these stock options were estimated using the Monte Carlo simulation method utilizing a volatility of 61.6% and a risk-free rate of 2.4%. The weighted-average fair value of these awards is \$2.92 and the derived service periods range from approximately one and one-half years to approximately two years. As of December 31, 2011, no part of the grant had been achieved. If the targets are not met, the non-qualified stock options will expire on the third anniversary of the grant date.

**ADVANCED ENERGY INDUSTRIES, INC.**

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

The fair value of options granted during the years ended December 31, 2011, 2010 and 2009 was estimated on the date of grant using the Black-Scholes-Merton option-pricing model using the following assumptions by grant year (except as noted above):

	<u>2011</u>	<u>2010</u>	<u>2009</u>
<b>Fair value assumptions - stock options:</b>			
Risk-free interest rates	1.09% - 2.4%	1.3% - 2.6%	1.9% - 2.4%
Expected dividend yield rates	— %	— %	— %
Expected term	5.5 years	5.8 years	5.5 years
Expected volatility	58 %	63 %	63.5 %

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.

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

	<u>2011</u>	<u>2010</u>	<u>2009</u>
	<b>(In thousands, except share prices)</b>		
Weighted-average grant date fair value of options	\$ 6.68	\$ 8.71	\$ 5.84
Total intrinsic value of options exercised	\$ 896	\$ 979	\$ 113

Changes in outstanding stock options during the year ended December 31, 2011 were as follows:

	<u>Shares</u>	<u>Weighted- Average Exercise Price</u>
	<b>(In thousands, except share prices)</b>	
<b>Changes in outstanding stock options:</b>		
Options outstanding at December 31, 2010	5,709	\$ 14.72
Options granted	1,743	12.02
Options exercised	(216)	10.60
Options forfeited	(886)	13.20
Options expired	(529)	19.73
Options outstanding at December 31, 2011	<u>5,821</u>	13.84

As of December 31, 2011, there was \$14.5 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 2015, with a weighted-average remaining vesting period of 3.0 years. Information about our stock options that are outstanding, options that we expect to vest and options that are exercisable at December 31, 2011 follows:

	<u>Number</u>	<u>Weighted- Average Exercise Price</u>	<u>Weighted- Average Remaining Contractual Life</u>	<u>Aggregate Intrinsic Value</u>
<b>Options Expected to Vest:</b>				
	<b>(In thousands, except share prices and lives)</b>			
Options outstanding	5,821	\$ 13.84	6.4 years	\$ 2,740
Options expected to vest	5,270	14.08	6.1 years	2,366
Options exercisable	2,952	15.30	4.2 years	1,346



**ADVANCED ENERGY INDUSTRIES, INC.**

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

The following table summarizes information about the stock options outstanding at December 31, 2011:

Range of Exercise Prices	Options Outstanding			Options Exercisable	
	Number Outstanding	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	2,082	6.7 years	\$ 9.22	1,024	\$ 9.33
\$12.44 to \$14.52	2,089	7.9 years	13.74	636	13.64
\$14.53 to \$38.55	1,650	4.1 years	19.78	1,292	20.85
\$7.15 to \$38.55	<u>5,821</u>	6.4 years	13.84	<u>2,952</u>	15.30

*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, 2011 were as follows:

	Shares (In thousands)
Balance at December 31, 2010	447
RSUs granted	623
RSUs vested	(147)
RSUs forfeited	(159)
Balance at December 31, 2011	<u>764</u>

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

	2011	2010	2009
	(In thousands, except share prices)		
Weighted-average grant date fair value of RSUs	\$ 12.94	\$ 14.79	\$ 9.76
Total fair value of RSUs converted to shares	\$ 1,974	\$ 1,923	\$ 1,555

As of December 31, 2011, there was \$6.4 million of total unrecognized compensation cost, net of expected forfeitures related to non-vested RSUs granted, which is expected to be recognized through fiscal 2015, 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 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, 2011, 485,039 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, 2011, 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, 2011, and 2010. No compensation expense was recognized in the year ended December 31, 2009 related to our ESPP.

# ADVANCED ENERGY INDUSTRIES, INC.

## NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)

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:

	<u>2011</u>	<u>2010</u>	<u>2009</u>
Risk-free interest rates	0.05% - 0.1%	0.2% - 0.3%	0.2% - 0.3%
Expected dividend yield rates	— %	— %	— %
Expected term	0.5 years	0.5 years	0.5 years
Expected volatility	61.9 %	62.8 %	63.5 %

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 14. 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, 2011 and 2010, 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, 2011, 2010, and 2009 we recognized total defined contribution benefit plan costs of \$1.3 million, \$0.7 million, and \$0.0 million, respectively.

### NOTE 15. 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, 2010	\$ 6
Unrealized holding gain, net of realized amounts reclassified to net income	(21)
Balance at December 31, 2011	<u>\$ (15)</u>

#### Accumulated foreign currency translation adjustments:

Balance at December 31, 2010	\$ 27,068
Translation adjustments	1,474
Balance at December 31, 2011	<u>28,542</u>
Total accumulated other comprehensive income	<u>\$ 28,527</u>

### NOTE 16. 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.

#### Operating Leases

We have various operating leases for automobiles, equipment, and office and production facilities. Rent expense under operating leases was approximately \$6.6 million in 2011, \$6.0 million in 2010, and \$6.1 million in 2009.

**ADVANCED ENERGY INDUSTRIES, INC.**

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

The future minimum rental payments required under non-cancelable operating leases as of December 31, 2011 are as follows (in thousands):

2012	\$ 6,842
2013	4,502
2014	3,341
2015	2,846
2016	1,948
Thereafter	<u>8,522</u>
	<u>\$ 28,001</u>

**NOTE 17. RESTRUCTURING COSTS**

In September 2011, we approved and committed to several initiatives to realign our manufacturing and research and development activities in order to foster growth and enhance profitability. These initiatives are designed to align research and development activities with the location of our customers and reduce product costs for the Solar Energy business. Under this plan, we have reduced the global workforce by approximately 202 people or 12.1% of the workforce, begun consolidation of our facilities by terminating a lease of office and research and development space, and recorded impairments for assets no longer in use due to the restructuring of our business.

Over the next 9 to 15 months, we will continue to evaluate our cost structure as we close facilities and relocate certain functions. Estimated total expenses to be incurred under this plan are between \$12.0 and \$16.0 million including the amounts recognized in 2011 and noted below. Of this total, approximately \$4.5 to \$5.0 million relates to severance costs, \$1.7 million relates to asset impairments, and \$6.0 to \$10.0 million relates to costs to close facilities and relocate portions of our manufacturing.

The following table summarizes the components of our restructuring costs incurred under this plan (in thousands):

	<u><b>December 31, 2011</b></u>
Severance and related costs	\$ 3,621
Property and equipment impairments	1,739
Facility closure costs	<u>1,988</u>
Total restructuring charges	<u>\$ 7,348</u>

The following table summarizes our restructuring liabilities under the 2011 plan(in thousands):

	<u><b>Balances at December 31, 2010</b></u>	<u><b>Costs incurred and charged to expense</b></u>	<u><b>Cost paid or otherwise settled</b></u>	<u><b>Effect of Change in Exchange Rates</b></u>	<u><b>Balances at December 31, 2011</b></u>
Severance and related costs	\$ —	\$ 3,621	\$ (2,803)	\$ (18)	\$ 800
Property and equipment impairments	—	1,739	(1,739)	—	—
Facility closure costs	—	1,988	(969)	—	1,019
Total restructuring liabilities	<u>\$ —</u>	<u>\$ 7,348</u>	<u>\$ (5,511)</u>	<u>\$ (18)</u>	<u>\$ 1,819</u>

During 2009 we completed a cost reduction plan that was initiated in 2008. Costs incurred in 2009 under this plan were \$4.4 million which were primarily severance and benefit expenses related to reductions in workforce.

**NOTE 18. OTHER INCOME, NET**

During 2011 and 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 for the years ended December 31, 2011 and 2010 were \$0.4 million and \$1.2 million, respectively. The

# ADVANCED ENERGY INDUSTRIES, INC.

## NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)

revenues 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 19. RELATED PARTY TRANSACTIONS

During the years ended December 31, 2011, 2010, and 2009 we had the following related party transactions (in thousands):

	2011	2010	2009
Sales — related parties	\$ 3,874	\$ 8,057	\$ —
Rent expense — related parties	2,306	2,823	2,900

#### *Sales — Related Parties*

Members of our Board of Directors hold various executive positions and serve as directors at other companies, including companies that are our customers. During the year ended December 31, 2011 we had sales to three such companies as noted above and aggregate accounts receivable from two such customers totaled \$48 thousand at December 31, 2011. During the twelve months ended December 31, 2011, one such company returned \$0.1 million of product that was previously sold. During the year ended December 31, 2010 we had sales to three such companies as noted above and aggregate accounts receivable from three such customers totaled \$386 thousand at December 31, 2011. During the year ended December 31, 2009 there was no outstanding related party balances.

#### *Rent Expense — Related Parties*

We lease our executive offices, research and development, 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. On December 28, 2011 we terminated the existing leases and entered into new leases for these properties. The leases relating to these spaces expire during 2021 and obligate us to total annual payments of approximately \$1.4 million, which includes facilities rent and common area maintenance costs.

### NOTE 20. GEOGRAPHIC AND SIGNIFICANT CUSTOMER INFORMATION

We have operations in the United States, Europe and Asia. Our disclosure 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,					
	2011		2010		2009	
			(In thousands)			
United States	\$ 338,343	65.5%	\$ 270,606	58.9%	\$ 71,439	44.1%
Canada	3,622	0.7%	—	—%	—	—%
North America	341,965	66.2%	270,606	58.9%	71,439	44.1%
People's Republic of China	38,654	7.5%	48,024	10.5%	11,372	7.0%
Other Asian countries	79,424	15.3%	88,872	19.3%	55,081	34.1%
Asia	118,078	22.8%	136,896	29.8%	66,453	41.1%
Germany	47,228	9.1%	47,339	10.3%	19,949	12.3%
Other European Countries	9,528	1.9%	4,573	1.0%	4,005	2.5%
Europe	56,756	11.0%	51,912	11.3%	23,954	14.8%
Total sales	\$ 516,799	100.0%	\$ 459,414	100.0%	\$ 161,846	100.0%

# ADVANCED ENERGY INDUSTRIES, INC.

## NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)

	December 31,	
	2011	2010
<b>*Long lived assets:</b>		
United States	\$ 124,607	\$ 123,707
Canada	1,446	
Asia	5,968	7,226
Europe	270	417
	<u>\$ 132,291</u>	<u>\$ 131,350</u>

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

Sales to Applied Materials Inc., our largest customer, were \$68.0 million or 13.1% of total sales for 2011, \$86.4 million, or 18.8% of total sales, for 2010 and \$34.7 million, or 21.4% of total sales for 2009. 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.

### NOTE 21. SEGMENT 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 unique from those of our traditional thin-film capital equipment market. As a result, management 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 Solar Energy, will enable improved execution and a strategic focus on two distinct markets.

Thin Films offers power conversion products for direct current ("DC"), pulsed DC mid frequency, and radio frequency ("RF") power supplies, matching networks, and RF instrumentation, as well as, thermal instrumentation products. Our Thin Films SBU principally serves original equipment manufacturers ("OEMs") and end customers in the semiconductor, flat panel display, solar panel, and other capital equipment markets.

- Our power conversion systems refine, modify, and control the raw electrical power from a utility and convert it into 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 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.
- Our network of global service support centers offer repair services, conversions, upgrades, and refurbishments to companies using our products.

Solar Energy offers both a transformer-based or transformerless advanced grid-tied PV inverter 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. Our Solar Energy business unit focuses on residential, commercial, and utility-scale solar projects and installations, selling primarily to distributors, engineering, procurement, and construction contractors, developers, and utility companies. Our Solar Energy revenue has seasonal variations. Installations of inverters are normally lowest during the first quarter as a result of typically poor weather and installation scheduling by our customers.

Our chief operating decision maker and management personnel began reviewing our performance and making resource allocation decisions by reviewing the results of our two business segments separately. Revenue and operating profit is now reviewed by our chief operating decision maker, however, we have only divided inventory and property and equipment based on business segment. Due to the structure of our internal organization and the manner in which expenses were tracked and managed and as a result of the design of our internal systems during fiscal 2010, we were unable to recast related financial information by operating segment for fiscal 2010 and prior. As such, segment information, other than revenue, for the years ended December 31, 2010, and 2009 is not reported as it is impracticable to do so.

**ADVANCED ENERGY INDUSTRIES, INC.**

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

Revenue with respect to operating segments is as follows (in thousands):

	<u><b>December 31, 2011</b></u>	<u><b>December 31, 2010</b></u>	<u><b>December 31, 2009</b></u>
Thin Films	\$ 328,614	\$ 353,696	\$ 154,079
Solar Energy	188,185	105,718	7,767
Total	<u>\$ 516,799</u>	<u>\$ 459,414</u>	<u>\$ 161,846</u>

Income from continuing operations before income taxes by operating segment is as follows (in thousands):

	<u><b>December 31, 2011</b></u>
Thin Films	\$ 68,241
Solar Energy	4,323
Total segment operating income	72,564
Corporate expenses	(23,313)
Other income	1,217
Income (loss) from continuing operations before income taxes	<u>\$ 50,468</u>

Segment assets consist of inventories and property and equipment, net. A summary of consolidated total assets by segment as of December 31, 2011 follows (in thousands):

	<u><b>Total Assets</b></u>
Thin Films	\$ 59,025
Solar Energy	62,605
Total segment assets	121,630
Unallocated corporate property and equipment	991
Corporate assets	410,757
Consolidated total assets	<u>\$ 533,378</u>

“Corporate” is a non-operating business segment with the main purpose of supporting operations. Our amortization of intangibles is not allocated to business segment financial statements reviewed by our chief operating decision maker and management personnel. Unallocated corporate assets include accounts receivable, deferred income taxes and intangible assets.

## 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 (Garry Rogerson, Chief Executive Officer) 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, 2011. 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 effective 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, 2011, using the criteria described in *Internal Control — Integrated Framework* issued by the Committee of Sponsoring Organizations of the Treadway Commission. Based upon this evaluation, management concluded that our internal control over financial reporting was effective as of December 31, 2011.

As discussed in Note 2 — *Business Acquisition and Disposition*, to our Consolidated Financial Statements, on May 3, 2010, we acquired PV Powered. PV Powered had established internal controls over financial reporting and during the time from the date of acquisition through September 30, 2011 we implemented additional internal controls over financial reporting. We also completed the integration of PV Powered to our systems during the third quarter of 2011. This integration, and the additional controls implemented, aligns the controls of PV Powered with the rest of Advanced Energy. The internal controls over financial reporting of PV Powered were included in management's evaluation of the effectiveness of the internal controls over financial reporting of Advanced Energy.

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, 2011.

### 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 2011 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, or fraud, if any. All control systems, no matter how well designed and implemented, have inherent limitations, and therefore no evaluation 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 2012 Annual Meeting of Stockholders (the “2012 Proxy Statement”), as set forth below. The 2012 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 2012 Proxy Statement under the headings “Proposal No. 1/ Election of Directors” 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 2012 Proxy Statement under the headings “Summary Compensation” 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 2012 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 19 — *Related Party Transactions* to our Consolidated Financial Statements, and in the 2012 Proxy Statement under the caption “Certain Relationships and Related Transactions” is incorporated herein by reference.

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

The information set forth in the 2012 Proxy Statement under the caption “Fees Billed by Independent Public Accountants” is incorporated herein by reference.



## **PART IV**

### **ITEM 15. EXHIBITS AND 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, 2011 and 2010

Statements of Operations for each of the three years in the period ended December 31, 2011

Statements of Stockholders' Equity for each of the three years in the period ended December 31, 2011

Statements of Cash Flows for each of the three years in the period ended December 31, 2011

Notes to Consolidated Financial Statements

2. Financial Statement Schedules for each of the three years in the period ended December 31, 2011

**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 Termination Agreement, dated as of December 28, 2011, by and between Sharp Point Properties, LLC and Advanced Energy Industries, Inc., for buildings located in Fort Collins, Colorado. (37)
- 10.8 Lease Agreement, dated as of December 28, 2011, by and between Sharp Point Properties, LLC and Advanced Energy Industries, Inc., for a building located at 1625 Sharp Point Drive, Fort Collins, Colorado. (37)
- 10.9 Lease Agreement, dated as of December 28, 2011, by and between Sharp Point Properties, LLC and Advanced Energy Industries, Inc., for a building located at 2424 Midpoint Drive, Fort Collins, Colorado. (37)
- 10.10 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)
- 10.11 Form of Indemnification Agreement.(2)
- 10.12 1995 Stock Option Plan, as amended and restated through February 7, 2001.(7)\*
- 10.13 1995 Non-Employee Directors' Stock Option Plan, as amended and restated through February 7, 2001.(7)\*
- 10.14 2001 Employee Stock Option Plan.(1)\*
- 10.15 2002 Employee Stock Option Plan.(1)\*
- 10.16 2003 Stock Option Plan.(1)\*
- 10.17 Amendment No. 1 to 2003 Stock Option Plan, dated January 31, 2005.(8)\*
- 10.18 Form of Stock Option Agreement pursuant to the 2003 Stock Option Plan.(8)\*
- 10.19 Amended and Restated 2003 Employees' Stock Option Plan.(4)\*
- 10.20 2003 Non-Employee Directors' Stock Option Plan.(1)\*
- 10.21 2003 Non-Employee Directors' Stock Option Plan, as amended and restated.(4)\*
- 10.22 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)\*
- 10.23 Form of Restricted Stock Unit Agreement pursuant to the 2003 Non-Employee Directors' Stock Option Plan.(10)\*
- 10.24 Restricted Stock Unit Agreement pursuant to the 2003 Stock Option Plan.(11)\*
- 10.25 Performance Stock Option Agreement pursuant to the 2008 Omnibus Incentive Plan.\*
- 10.26 Performance Stock Unit Agreement pursuant to the 2008 Omnibus Incentive Plan.\*
- 10.27 Non-employee Director Compensation summary.(12)\*
- 10.28 Executive Change in Control Severance Agreement.(13)
- 10.29 Retirement Term Sheet relating to Douglas S. Schatz.(14)

- 10.30 Offer Letter to Hans-Georg Betz dated June 30, 2005.(15)
- 10.31 Offer letter, dated August 14, 2010, by and among Advanced Energy Industries, Inc. and Danny C. Herron.(31)
- 10.32 Offer Letter, dated August 1, 2011, by and among Advanced Energy Industries, Inc. and Garry Rogerson. (38)
- 10.33 Executive Change in Control Agreement, dated August 4, 2011, by and among Advanced Energy Industries, Inc. and Garry Rogerson.(39)
- 10.34 Executive Change in Control Agreement, dated March 29, 2008, by and among Advanced Energy Industries, Inc. and Yuval Wasserman.(19)
- 10.35 Executive Change in Control Agreement, dated August 14, 2010, by and among Advanced Energy Industries Inc. and Danny C. Herron.(32)
- 10.36 Executive Change in Control Agreement, dated August 14, 2010, by and among Advanced Energy Industries Inc. and Thomas O. McGimpsey.
- 10.37 Executive Change in Control Agreement, dated August 14, 2010, by and among Advanced Energy Industries Inc. and Gregg Patterson.(40)
- 10.38 Master Executive Separation Agreement, dated August 11, 2010, by and among Advanced Energy Industries, Inc. and Lawrence D. Firestone.(31)
- 10.39 Global Supply Agreement by and between Advanced Energy Industries, Inc. and Applied Materials Inc. dated August 29, 2005.(16)+
- 10.40 Shipping Amendment to the Global Supply Agreement by and between Advanced Energy Industries, Inc. and Applied Materials Inc. dated August 29, 2005. (16)+
- 10.41 Bridge Amendment to the Global Supply Agreement by and between Advanced Energy Industries, Inc. and Applied Materials Inc. dated January 26, 2011. (40)+
- 10.42 Non-Employee Director Compensation Structure.(17)\*
- 10.43 2012 - 2014 Long-Term Incentive (LTI) Plan.\*
- 10.44 2012 Short Term Incentive (STI) Plan.\*
- 10.45 2008 Omnibus Incentive Plan, as amended May 4, 2010.(36)\*
- 10.46 Auction Rate Securities Rights Agreement dated October 8, 2008 by and between Advanced Energy Industries, Inc. and UBS Financial Services, Inc.(22)
- 10.47 Form of Director Indemnification Agreement.(24)
- 10.48 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)
- 10.49 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)

- 10.50 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)
- 10.51 Advisory Agreement by and between Advanced Energy Industries, Inc. and Elwood Spedden, dated as of May 3, 2010.(27)
- 10.52 Asset Purchase Agreement, dated as of July 21, 2010, by and among Advanced Energy Industries, Inc. and Hitachi Metals, Ltd.(30)
- 10.53 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 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

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- (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.
- (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 Quarterly 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.
- (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 Quarterly 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) Reserved.
- (36) Incorporated by reference to the Registrant's Annual Report on Form 10-K (File No. 000-26966), filed March 2, 2011.
- (37) Incorporated by reference to the Registrant's Current Report on Form 8-K (File No. 000-26966), filed December 29, 2011.
- (38) Incorporated by reference to the Registrant's Current Report on Form 8-K (File No. 000-26966), filed August 2, 2011.
- (39) Incorporated by reference to the Registrant's Current Report on Form 8-K (File No. 000-26966), filed August 4, 2011.
- (40) Incorporated by reference to the Registrant's Quarterly Report on Form 10-Q (File No. 000-26966), filed May 6, 2011.

\* Compensation Plan

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

## 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/ Garry Rogerson  
Garry Rogerson  
Chief Executive Officer

Date: March 2, 2012

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.

<u>Signatures</u>	<u>Title</u>	<u>Date</u>
<u>/s/ Garry Rogerson</u> Garry Rogerson	Chief Executive Officer and Director	March 2, 2012
<u>/s/ Danny C. Herron</u> Danny C. Herron	Executive Vice President and Chief Financial Officer	March 2, 2012
<u>/s/ Douglas S. Schatz</u> Douglas S. Schatz	Chairman of the Board	March 2, 2012
<u>/s/ Frederick A. Ball</u> Frederick A. Ball	Director	March 2, 2012
<u>/s/ Richard P. Beck</u> Richard P. Beck	Director	March 2, 2012
<u>/s/ Trung T. Doan</u> Trung T. Doan	Director	March 2, 2012
<u>/s/ Edward C. Grady</u> Edward C. Grady	Director	March 2, 2012
<u>/s/ Terry Hudgens</u> Terry Hudgens	Director	March 2, 2012
<u>/s/ Thomas M. Rohrs</u> Thomas M. Rohrs	Director	March 2, 2012





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