ADVANCED ENERGY INDUSTRIES INC
Form 10-K
March 06, 2013
Table Of Contents

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

FORM 10-K

þ ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934.
For the fiscal year ended December 31, 2012

or

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

Commission file number: 000-26966

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

Delaware	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 o No þ

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 o No þ

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

Indicate by check mark 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 þ No o

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

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 o	Accelerated filer þ	Non-accelerated filer o	Smaller reporting company o

(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 o No þ

The aggregate market value of voting and non-voting common stock held by non-affiliates of the registrant was $469,974,909 as of June 30, 2012, 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.

39,099,255

(Number of shares of Common Stock outstanding as of February 28, 2013)

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 2013 Annual Meeting of Stockholders, scheduled to be held on May 1, 2013. 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.

ADVANCED ENERGY INDUSTRIES, INC.
FORM 10-K
TABLE OF CONTENTS

Table Of Contents

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, thin film renewables, 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 primarily 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 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 increase the number solar array opportunities where our products can be utilized.

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

On November 8, 2012, we acquired Solvix SA ("Solvix"), a privately held company based in Villaz-Saint-Pierre, Switzerland. A manufacturer of power supplies for the surface treatment and thin films industry, Solvix brings plasma-based sputtering and cathodic arc deposition applications to Advanced Energy's existing product portfolio. With its arc detection and suppression technology, Solvix's product line will enhance Advanced Energy's offerings in low power and pulsed DC products, allowing it to expand into new applications and serve a broader worldwide customer base. With the addition of Solvix's engineering site in Villaz-Saint-Pierre, Advanced Energy will also establish a European engineering and development center for its thin-film industrial products business, in keeping with its strategy to move closer to its customers. Note 2 to our Consolidated Financial Statements, Business Acquisition and Disposition, describes the acquisitions of PV Powered and Solvix 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.

In January 2011, management announced the creation of two focused business units within the Company. The two business units are Thin Films Deposition Power Conversion and Thermal Instrumentation ("Thin Films") and Solar Energy. 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 21 to our Consolidated Financial Statements, Segment Information, describes our business units and their related financial information including sales, segment operating income, and total segment assets. Also included in Note 21 is information related to the location of our long-lived assets.

The Thin Films business unit principally serves original equipment manufacturers ("OEM") and end customers in the semiconductor, flat panel display, solar panel, and other industrial capital equipment markets. The Solar Energy business unit focuses mainly on commercial and utility-scale solar projects and installations selling primarily to distributors, Engineering, Procurement, and Construction contractors ("EPC"s), developers, and utility companies.

3

Table Of Contents

Our products are used in diverse markets, applications, and processes including the manufacture of capital equipment for semiconductor devices, thin-film applications for thin film renewables and architectural glass, and for other thin-film applications including flat panel displays, data storage, and industrial coatings, as well as the 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, Remote Plasma Sources ("RPS") for reactive gas applications 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, industrial hard coating and ophthalmic optical coating equipment makers, and architectural glass manufacturers.

Our thermal instrumentation products are used in the semiconductor industry, as well as the solar panel and light emitting diode ("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, crystal growing, and other semiconductor and solar applications requiring non-contact temperature measurement. In 2012, our thermal instrumentation group expanded its applications space through the development of non-contact measurement of the height of the melt in crystal growing crucibles.

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. Our customers continue to pursue low cost of ownership of their capital equipment and are increasingly sensitive to the significant costs of system downtime. They expect that suppliers offer comprehensive local repair service and customer support. To meet these market requirements, we maintain a worldwide support organization comprising of both direct and indirect activities through partnership with local distributors in the United States ("U.S."), the People’s Republic of China ("PRC"), Japan, South Korea, Taiwan, Germany, and Great Britain.

SOLAR ENERGY

Our solar power inverters offer both a transformer-based and a transformerless advanced grid-tied PV solution for 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.

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. Our Remote Plasma Sources deliver ionized gases for reactive chemical processes used in cleaning, surface treatment, and gas abatement.

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.

Table Of Contents

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 and flat TVs. This technology is used in manufacturing liquid crystal display, 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. Increased focus on user experience and interface drives the use for new materials and device architecture such as organic light-emitting diode ("OLED") and active-matrix light-emitting diode ("AMOLED") and new technologies for touch screen.

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 power supplies in their production equipment. This glass is used in commercial and residential buildings to reduce energy absorption and loss through the use of thin films coated directly on the glass which reduces the energy absorbed 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 in the manufacturing process of products for a variety of industrial and consumer 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. The need for improved films properties for both hard coating and optical coating requires a precision power conversion technology which we recently achieved through the acquisition of Solvix products and technology.

Solar Energy

We sell primarily 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.

Table Of Contents

Customers

Our products are sold worldwide to approximately 464 OEMs and integrators and directly to more than 1,480 end users. Our ten largest customers accounted for approximately 47.7% of our sales in 2012, 44.6% of our sales in 2011, and 48.8% of our sales in 2010. 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 14.1% of our sales in 2012, 13.1% of our sales in 2011, and 18.8% of our sales in 2010. Additionally, in June 2012, Lam Research merged with Novellus Systems, Inc. Had the two businesses been a combined entity for the full year, they would have accounted for 10.7% of our sales in 2012. No other customer accounted for greater than 10% of our sales in 2012, 2011, or 2010. The loss of Applied Materials, Inc. or Lam Research as a customer could have a material adverse effect on our results of operations.

Backlog

Our backlog was approximately $92.7 million at December 31, 2012, a 20.5% increase from $76.9 million at December 31, 2011. This increase was the result of increased inverter orders driven by the expansion of our operations in Canada, as well as large utility-scale project wins. 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 through direct and indirect sales channels in North America, Europe, and Asia. Our sales operations are located in the United States, Canada, the PRC, Great Britain, Germany, Japan, South Korea, and Taiwan. In addition to a direct sales force, we have independent sales representatives and distributors 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, 2012, 2011, and 2010. Sales are attributed to individual countries based on customer location.

	Years ended December 31,		
Sales to external customers:	2012	2011	2010
	(In thousands)		
United States	$322,847	$338,343	$270,606
Canada	30,113	3,622	—
North America	352,960	341,965	270,606
People's Republic of China	19,987	38,654	48,024
Other Asian countries	54,825	79,424	88,872
Asia	74,812	118,078	136,896
Germany	18,374	47,228	47,339
Other European Countries	5,785	9,528	4,573
Europe	24,159	56,756	51,912
Total sales	$451,931	$516,799	$459,414

Total sales to all foreign countries totaled $129.1 million, $178.5 million, and $188.8 million in the years ended December 31, 2012, 2011, and 2010, respectively.

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

6

Table Of Contents

Manufacturing

The manufacturing of our Thin Films related power products is performed in Shenzhen, PRC and Seoul, South Korea. With the acquisition of Solvix, we entered into a contract manufacturing agreement with the previous owner whose manufacturing facility is in Switzerland. We plan to transition the manufacturing of these products to our Shenzhen facility in 2013. Manufacturing in these three 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 in Fort Collins, Colorado; Bend, Oregon; Ontario, Canada; and Shenzhen, PRC. Shenzhen has become a platform for building commonality of parts in the inverters and then shipping to the US and Canada for final assembly and test and to support local content requirements.

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. These contract manufacturing services were concluded and completely transferred to Hitachi Metals Ltd. in June 2012.

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 for Thin Films 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 in geographies that reduce costs without degradation to quality;

(5) locating certain manufacturing operations in areas that are closer to suppliers and customers; and

(6) competitively sourcing parts through electronic bidding tools to ensure the lowest total cost is achieved for the parts needed in our products.

Intellectual Property

We seek patent protection for inventions governing new products or technologies as part of our ongoing research and development. We currently hold 106 United States patents and 47 foreign-issued patents, and have 136 patent applications pending in the United States, Europe, Asia, India, Brazil, South Africa, and Chile. 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 2012, we acquired Solvix and all related intellectual property including one United States patent and one patent application pending in the United States.

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

Table Of Contents

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. ("MKSI"), Comdel, Inc., Daihen Corporation, Kyosan Electric Mfg. Co., Ltd., Hüttinger Elektronik GmbH, Comet Holding AG, New Plasma Products (NPP), Entech, Plasmart (now a division of MKSI), and ADTech compete with our power conversion products for thin film processing. Lumasense Technologies, CI Systems, BASF, and Laytec GmbH offer products that compete with our thermal products. SMA Solar Technology AG, Power-One, Inc., Schneider Electric SA, and Siemens AG offer products that compete with our solar inverters.

Additionally, a focus on local content is causing new competitors for both our business units to emerge around the world, 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 $58.1 million in 2012, $65.0 million in 2011, and $56.6 million in 2010, representing 12.9% of our sales in 2012, 12.6% of our sales in 2011, and 12.3% of our sales in 2010.

8

Table Of Contents

Employees

As of December 31, 2012, we had a total of 1,354 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. 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. 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, goals, 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;

Table Of Contents

- 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, 2012 are as follows:

Garry W. Rogerson, 60, joined us in August 2011 as our Chief Executive Officer and Board member. Mr. Rogerson was Chairman from 2009 and Chief Executive Officer from 2004 of Varian, Inc., a major supplier of scientific instruments and consumable laboratory supplies, vacuum products, and services, 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, 58, 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, 58, 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 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 Syncroness, Inc., an outsourced engineering and product development company, in 2010. Mr. Wasserman received a Bachelor of Science in Chemical Engineering from the Ben-Gurion University in Be'er Sheva, Israel.

Gordon Tredger, 52, joined us in December 2011, and was appointed President of the Solar Energy business unit in April 2012. From May 2010 to December 2010, he served as Executive Vice President of Operations at the Chemical Analysis Division of Bruker Daltonics, a leading provider of high-performance scientific instruments and solutions. From March 2006 through May 2010, Mr. Tredger was Vice President of Analytical Instruments at Varian Inc., a leading worldwide supplier of scientific instrumentation. Mr. Tredger held prior executive roles at Argonaut Technologies, Perkin-Elmer Instruments, and Photovac (acquired by Perkin-Elmer). Mr. Tredger received a Bachelor of Arts degree from the University of Toronto in Ontario, Canada.

Thomas O. McGimpsey, 51, 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. Mr. McGimpsey received his Masters of Business Administration from Colorado State University (with honors) in 2008, his Juris Doctor

Table Of Contents

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;
- suppliers that may provide parts, components or subassemblies that are defective, contain counterfeit goods or are otherwise misrepresented to us in terms of form, fit or function; 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

Table Of Contents

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, 2012 under these purchase commitments and agreements was $54.4 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. Some of our key 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

Table Of Contents

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.

Cyclicality 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, changes in technology trends in the industry, behaviors by our customers resulting from technology trend changes, 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. Sales to large solar projects can cause variations in our revenue from quarter to quarter. 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 on-site 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

Table Of Contents

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 benefited from, various unfair trade practices. A similar trade case may also be filed in Europe. In early 2012, duties were imposed on solar panels imported from China which have resulted in other trade-related conflicts. Since some of our inverters are well-suited for use with crystalline silicon panel modules, the impact of these duties on the cost of solar panels 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 47.7% of our sales in 2012, 44.6% of our sales in 2011, and 48.8% of our sales in 2010. Applied Materials Inc., our largest customer, accounted for 14.1% of our sales in 2012, 13.1% of our sales in 2011, and 18.8% of our sales in 2010. Additionally, in June 2012, Lam Research merged with Novellus Systems, Inc. Had the two businesses been a combined entity for the full year, they would have accounted for 10.7% of our sales in 2012. No other single customer accounted for more than 10% of our sales during 2012, 2011 or 2010. At December 31, 2012 our

14

Table Of Contents

accounts receivable from Applied Materials accounted for 13.0% of our total accounts receivable. At December 31, 2011 our accounts receivable Hitachi Metals, Ltd. comprised 16.2% of our total accounts receivable. No other single customer accounted for more than 10% of our accounts receivable as of December 31, 2012, or 2011. 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

15

Table Of Contents

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.

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

In 2010 and 2012, we acquired PV Powered, Inc. and Solvix, respectively, 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.

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. In particular, our commercial and utility-grade solar inverters have product specification, installation and maintenance requirements that if not followed could result in product failure or downtime. Although we conduct testing on our products, our solar inverters cannot be tested in an environment simulating the various site conditions that may exist, and accordingly, from time to time, we have to review product performance in the field. If any of our products are defective or fail, we might be required to repair, redesign or recall those products, pay damages (including liquidated 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.

Table Of Contents

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 transformer based solar inverters are manufactured in Bend, Oregon and Ontario, Canada. Our transformerless inverter products are manufactured at our Fort Collins, Colorado and Ontario, Canada facilities and we have entered into a contract manufacturing relationship in the PRC as well. While manufacturing could be shifted to a different manufacturing location for the transformer based and transformerless inverters if a labor disruption, supply difficulty or 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.

Our restructuring and other cost-reduction efforts have included transitioning manufacturing operations to our facility in Shenzhen from other manufacturing facilities, such as Fort Collins and Bend, which renders us increasingly reliant upon our Shenzhen facility. A disruption in manufacturing at our Shenzhen facility, from whatever cause, could have a significantly adverse effect on our ability to fulfill customer orders, our ability to maintain customer relationships, our costs to manufacture our products and, as a result, our results of operations and financial condition.

We are subject to risks inherent in international operations.

Sales to our customers outside the United States were approximately 28.6% of our total sales in 2012, 34.5% in 2011, and 41.1% in 2010. 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 $38.8 million in accounts receivable from foreign customers as of December 31, 2012; 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.

Table Of Contents

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

Table Of Contents

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 Great Britain, 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 the Czech Republic have proposed reductions to their feed-in tariffs while Italy and Germany 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.

Table Of Contents

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 $60.4 million of goodwill and $46.2 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.

The Dodd-Frank Wall Street Reform and Consumer Protection Act (the "Dodd-Frank Act") requires various federal agencies to adopt a broad range of new implementing rules and regulations, and to prepare numerous studies and reports for Congress. The Dodd-Frank Act includes a requirement, and the SEC has adopted a rule for disclosure regarding certain minerals, known as conflict minerals, necessary to the functionality or production of a product manufactured by reporting companies. To meet the initial disclosure requirements, which begin in 2014, we must begin due diligence in 2013 to determine the sources of the conflict minerals used in our products. These efforts may result in additional costs or other potential changes to our products, processes or sources of supply which could adversely impact our results of operations. We may also be suffer reputational impacts if we are unable to verify the sources of the conflict minerals used in our products, which could result in our customers choosing competitors products.

Table Of Contents

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 7.4% of our outstanding common stock as of February 28, 2013. 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® 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® mass flow control and related product lines and real property in Japan to Hitachi Metals, Ltd. ("Hitachi Metals"). 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.

We maintain significant amounts of cash in international locations.

Given the global nature of our business, we have both domestic and international concentrations of cash and investments. The value of our cash, cash equivalents, and marketable securities can be negatively affected by liquidity, credit deterioration, financial results, economic risk, political risk, sovereign risk or other factors. As a result, we could incur a significant impairment of our cash, cash equivalents, and marketable securities, which could materially adversely affect our financial condition and results of operations.

21

Table Of Contents

Historically, acquisitions have been an important element of our strategy. However, we may not find suitable acquisition candidates in the future and we may not be able to successfully integrate and manage acquired businesses. Any acquisitions we make could disrupt our business and harm our financial condition.

We have in the past made strategic acquisitions of other corporations and entities, as well as asset purchases, and we continue to evaluate potential strategic acquisitions of complementary companies, products, and technologies. In the event of any future acquisitions, we could:

- issue stock that would dilute our current stockholders' percentage ownership;
- pay cash that would decrease our working capital;
- incur debt;
- assume liabilities; or
- incur expenses related to impairment of goodwill and amortization.

Acquisitions also involve numerous risks, including:

- problems combining the acquired operations, systems, technologies, or products;
- an inability to realize expected operating efficiencies or product integration benefits;
- difficulties in coordinating and integrating geographically separated personnel, organizations, systems, and facilities;
- difficulties integrating business cultures;
- unanticipated costs or liabilities, including the costs associated with improving the internal controls of the acquired company;
- diversion of management's attention from our core business;
- adverse effects on existing business relationships with suppliers and customers;
- potential loss of key employees, particularly those of purchased organizations;
- incurring unforseen obligations or liabilities in connection with acquisitions; and
- the failure to complete acquisitions even after signing definitive agreements which, among other things, would result in the expensing of potentially significant professional fees and other charges in the period in which the acquisition or negotiations are terminated.

We cannot assure you that we will be able to successfully identify appropriate acquisition candidates, to integrate any businesses, products, technologies, or personnel that we might acquire in the future or achieve the anticipated benefits of such transactions, which may harm our business.

Difficulties with our enterprise resource planning (“ERP”) system and other parts of our global information technology system could harm our business and results of operation. If our network security measures are breached and unauthorized access is obtained to a customer's data or our data or our information technology systems, we may incur significant legal and financial exposure and liabilities.

Like many modern multinational corporations, we maintain a global information technology system, including software products licensed from third parties. Any system, network or Internet failures, misuse by system users, the hacking into or disruption caused by the unauthorized access by third parties or loss of license rights could disrupt our ability to timely and accurately manufacture and ship products or to report our financial information in compliance with the timelines mandated by the SEC. Any such failure, misuse, hacking, disruptions or loss would likely cause a diversion of management's attention from the underlying business and could harm our operations. In addition, a significant failure of our global information technology system could adversely affect our ability to complete an evaluation of our internal controls and attestation activities pursuant to Section 404 of the Sarbanes-Oxley Act of 2002.

Table Of Contents

As part of our day-to-day business, we store our data and certain data about our customers in our global information technology system. While our system is designed with access security, if a third party gains unauthorized access to our data, including any regarding our customers, such security breach could expose us to a risk of loss of this information, loss of business, litigation and possible liability. These security measures may be breached as a result of third-party action, including intentional misconduct by computer hackers, employee error, malfeasance or otherwise. Additionally, third parties may attempt to fraudulently induce employees or customers into disclosing sensitive information such as user names, passwords or other information in order to gain access to our customers' data or our data, including our intellectual property and other confidential business information, or our information technology systems. Because the techniques used to obtain unauthorized access, or to sabotage systems, change frequently and generally are not recognized until launched against a target, we may be unable to anticipate these techniques or to implement adequate preventative measures. Any security breach could result in a loss of confidence by our customers, damage our reputation, disrupt our business, lead to legal liability and negatively impact our future sales.

Our credit facility contains restrictions that may limit our flexibility in operating our business.

In October 2012, we entered into a credit facility with Wells Fargo Bank, N.A. The credit facility contains various financial and negative operating covenants that limit our ability to engage in specified types of transactions. The financial covenant requires that we maintain a minimum fixed charge coverage ratio. The operating covenants limit our ability to, among other things:

- sell, transfer, lease or dispose of our assets;
- create, incur or assume additional indebtedness;
- encumber or permit liens on certain of our assets
- make restricted payments, including paying dividends on, repurchasing or making distributions with respect to our common stock;
- make specified investments (including loans and advances);
- consolidate, merge, sell or otherwise dispose of all or substantially all of our assets; and
- enter into certain transactions with our affiliates.

A breach of any of these covenants or a material adverse change to our business could result in a default under the credit agreement. Upon the occurrence of an event of default under our credit agreement, our lenders could elect to declare all amounts outstanding to be immediately due and payable and terminate all commitments to extend further credit. If we were unable to repay those amounts, the lenders could proceed against the collateral granted to them to secure such indebtedness.

ITEM 1B. UNRESOLVED STAFF COMMENTS

None.

Table Of Contents

ITEM 2. PROPERTIES

Information concerning our principal properties at December 31, 2012 is set forth below:

Location	Principal Activity	Business Unit	Ownership
Fort Collins, CO	Corporate headquarters, research and development, manufacturing, distribution, sales, and service	Thin Films / Solar Energy	Leased
Bend, OR	Research and development, manufacturing, distribution, sales, and service	Solar Energy	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
Singapore	Sales and service	Thin Films	Leased
Taipei, Taiwan	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, 2013, the number of common stockholders of record was 468, and the closing sale price of our common stock on the NASDAQ Global Select Market on that day was $18.04 per share.

Table Of Contents

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:

	2012		2011	
	High	Low	High	Low
First Quarter	$13.40	$10.64	$16.83	$13.32
Second Quarter	$13.95	$11.72	$16.22	$13.51
Third Quarter	$14.14	$11.01	$15.02	$8.62
Fourth Quarter	$13.81	$11.27	$11.01	$8.01

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, 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, during the year ended ended December 31, 2012, we repurchased and retired 4.7 million shares of our common stock for a total of $57.1 million. As of June 30, 2012, we completed this repurchase program. Total shares repurchased are 6.4 million shares of our common stock for $75.0 million.

Share repurchases are as follows (in thousands, except for average price per share):

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
January 1, 2012 to January 31, 2012	1,019	$10.92	1,019	$45,971
February 1, 2012 to February 29, 2012	590	$10.95	590	$39,513
March 1, 2012 to March 31, 2012	368	$11.78	368	$35,173
April 1, 2012 to April 30, 2012	430	$11.91	430	$30,052
May 1, 2012 to May 31, 2012	2,010	$13.39	2,010	$3,136
June 1, 2012 to June 30, 2012	240	$13.14	240	$—
Total	4,657	$12.26	4,657	

All share repurchases 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.

In October 2012, our Board of Directors authorized a program to repurchase up to $25.0 million of our common stock over a twelve-month period. Under this program, during the year ended ended December 31, 2012, we have not yet repurchased any shares.

Table Of Contents

Performance Graph

The performance graph below shows the five-year cumulative total stockholder return on our common stock during the period from December 31, 2008 through December 31, 2012. 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, 2007 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 12/31/07 in stock or index, including reinvestment of dividends.
Indices and our stock performance calculated on a calendar year-end basis.

	12/07	12/08	12/09	12/10	12/11	12/12
Advanced Energy Industries, Inc.	$100.00	$76.07	$115.29	$104.28	$82.03	$105.57
NASDAQ Composite	100.00	59.03	82.25	97.32	98.63	110.78
PHLX Semiconductor	100.00	64.12	101.17	115.04	116.92	139.17

Table Of Contents

ITEM 6. SELECTED FINANCIAL DATA

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

	Years Ended December 31,				
	2012	2011	2010	2009	2008
	(In thousands, except per share data)				
Consolidated Statements of Operations Data:					
Sales	$451,931	$516,799	$459,414	$161,846	$285,166
Operating income (loss)	27,374	49,251	65,188	(97,140)	5,255
Income (loss) from continuing operations before income taxes	29,806	50,468	67,409	(95,230)	8,138
Income (loss) from continuing operations, net of income taxes	20,176	36,854	53,593	(101,812)	(6,501)
Income (loss) from discontinued operations, net of income taxes	405	(540)	17,599	(893)	4,722
Net income (loss)	20,581	36,314	71,192	(102,705)	(1,779)
Earnings per Share:					
Continuing Operations:					
Basic earnings (loss) per share	$0.52	$0.85	$1.25	$(2.43)	$(0.15)
Diluted earnings (loss) per share	$0.51	$0.84	$1.23	$(2.43)	$(0.15)
Discontinued Operations:					
Basic earnings (loss) per share	$0.01	$(0.01)	$0.41	$(0.02)	$0.11
Diluted earnings (loss) per share	$0.01	$(0.01)	$0.41	$(0.02)	$0.11
Net Income (Loss):					
Basic earnings (loss) per share	$0.53	$0.84	$1.66	$(2.45)	$(0.04)
Diluted earnings (loss) per share	$0.52	$0.83	$1.64	$(2.45)	$(0.04)
Basic weighted-average common shares outstanding	38,879	43,465	42,862	41,966	42,537
Diluted weighted-average common shares outstanding	39,447	43,954	43,419	41,966	42,537
Consolidated Balance Sheets Data:					
Total assets	$538,160	$533,378	$505,157	$345,125	$420,637

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

The market challenges we experienced in late 2011 continued into 2012. Our Thin Films business unit faced very weak markets in flat panel display and thin film renewables as compared to 2011 and also saw softening in the semiconductor market. Our Solar Energy business unit continued to grow in 2012 as we expanded our presence in the Canadian market and were awarded several large utility-scale projects in the United States. We continued to execute on our long-term strategic initiatives announced in the third quarter of 2011, focusing on re-aligning our business to better meet the needs of our customers. These initiatives have positioned us well to weather the current market

downturn and quickly respond when overall economic conditions improve and capacity expansions begin in the markets we serve.

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

Table Of Contents

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. 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 acquisitions of PV Powered in May 2010 and Solvix in November 2012 for total costs of $90.3 million and $21.2 million, respectively. The total cost of the Solvix acquisition includes $5.3 million of contingent consideration to be paid out over a three-year period upon completion of specific milestones. As a result of our acquisitions, 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. The annual impairment test can be performed using 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 have performed an assessment of qualitative factors for our annual impairment test in 2011 and 2012. The factors reviewed included macroeconomic conditions, industry and

Table Of Contents

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 are subject to income taxes in the United States and numerous foreign jurisdictions. When structuring our operations, we have considered the impact on our effective tax rate. Our effective tax rates differs from the US statutory rate due to factors such as foreign operations taxed at different tax rates, research and development tax credits, and non-deductible compensation. Our effective tax rate was 32.3%, 27.0%, and 20.5% for 2012, 2011, and 2010, respectively. Our determination of our tax liability requires estimation and significant judgment and is always subject to audit and review by applicable domestic and foreign tax authorities.

Our income tax rate is significantly affected by the tax rates that apply to our foreign earnings. In addition to local country tax laws and regulations, our income tax rate depends on the extent that our earnings are indefinitely reinvested outside the U.S. Indefinite reinvestment is determined by management's judgment about and intentions concerning our future operations. At December 31, 2012, $84.1 million of earnings had been indefinitely reinvested outside the U.S., primarily in active non-U.S. business operations. We do not intend to repatriate these earnings to fund U.S. operations and, accordingly, we do not provide for U.S. federal income and foreign withholding tax on these earnings.

Significant judgment is required in evaluating our uncertain tax positions and determining our provision for income taxes. Although we believe our reserves are reasonable, no assurance can be given that the final tax outcome of these matters will not be different from that which is reflected in our historical income tax provisions and accruals. We adjust these reserves in light of changing facts and circumstances, such as the closing of a tax audit or the refinement of an estimate. To the extent that the final tax outcome of these matters is different from the amounts recorded, such differences will affect the provision for income taxes in the period in which such determination is made. The provision for income taxes includes the effect of reserves and any changes to the reserves that are considered appropriate, as well as the related net interest and penalties, if applicable.

Significant judgment is required in determining any valuation allowance recorded against deferred tax assets. In assessing the need for a valuation allowance, we consider all available evidence, including past operating results, estimates of future taxable income, and the feasibility of tax planning strategies. In the event that we change our determination as to the amount of deferred tax assets that can be realized, we will adjust our valuation allowance with a corresponding effect to the provision for income taxes in the period in which such determination is made.

Business Environment and Trends

SEMICONDUCTORS

Investment in semiconductor capital equipment spending decreased overall worldwide by roughly 10% vs. 2011. With the maturing integrated circuit end-markets largely correlated to worldwide Gross Domestic Product and continuing consolidation at both the integrated circuit company level and the semiconductor equipment level, a

relatively strong semiconductor capital investment rate experienced in the first half of 2012 fell to lower levels in the second half of the year. In the second half of 2012 there were push-outs and reductions in spending plans on new investment as integrated circuit inventories and foundry utilization rates rose while there was uncertainty over large end-users integrated circuit foundry strategy and the macroeconomic environment.

Larger semiconductor equipment manufacturers are faced with increasing research and development challenges as they develop sub-22 nanometer ("nm") technology node products and processes while simultaneously developing Phase I prototype 450 mm tools for evaluation by consortia and end-users. These two drivers have sped innovation and increased the

Table Of Contents

number of new highly capable power generator and matching network opportunities. Smaller semiconductor equipment manufacturers continue to emerge in Korea developing both plasma-enhanced chemical vapor (“PECVD”) and etch technologies initially for memory processes with new penetrations into leading edge foundries. We believe that we are well positioned to offer both the depth and breadth of products required for the leading edge of product development at the larger OEMs and have the localization and customization positioning necessary to take advantage of the emerging Asia-based semiconductor equipment companies.

Looking forward, we believe that semiconductor equipment investment will be largely flat with optimism for an increase in the second half of 2013. We believe foundries and logic integrated circuit customers will continue to invest for leading edge capability and to develop sub 22 nm capacity and to capture shifts in fabless and “fab-lite” supply chain shifts. We believe memory investments will likely continue to remain suppressed in the first half of 2013, with capital investments perhaps beginning in the second half of the year. Volatility will continue as shifts in buying preferences for tablets vs. personal computers and the introduction of new mobility technologies will open opportunities that will be pursued by semiconductor equipment manufacturers with leading technologies, shortest lead times, and aggressive pricing. We believe we are one of the leaders in advanced RF technologies and matching networks with enabling tune-while-pulsing extra space capabilities for plasma control and should be well positioned to continue market penetration in etch, PECVD, and physical vapor deposition (“PVD”) applications.

FLAT PANEL DISPLAY

Growth in our flat panel display ("FPD") market is driven by both capacity expansion and investment in new technologies, particularly in the development of next-generation high-definition televisions, smart phones and tablet computers. In 2012, FPD investment paused significantly as the end market for displays absorbed the generation 8 liquid crystal display (“LCD”) capital that equipment manufacturers procured in 2011. The pause was exacerbated by lower manufacturer profitability, which limited new LCD equipment purchases. In addition, technical issues limited the deployment of robust manufacturing processes for next-generation AMOLED displays. Overall, we expect flat panel display sales to improve throughout most of 2013 as customers are now investing in generation 5.5 and 6 AMOLED capacity and plan to migrate to generation 8 AMOLED as soon as the technology is proven.

We believe we are well-positioned to benefit from growth in both etch and PVD process technologies 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 expanded localized Korean capabilities brings us closer to our customers and enhances our responsiveness to their evolving needs.

THIN FILM RENEWABLES

Demand for our crystalline silicon ("c-SI") PV products in Europe and China, which drove strength in renewables sales in 2011, decreased significantly in 2012. Declines in PV module prices, along with an oversupply of panel and capital equipment, negatively impacted thin-film renewables sales throughout 2012. As a result of this oversupply and uncertain demand in the major PV markets, wafer, cell and module production capacity is likely to stall until 2014 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, and many may cease production completely. This scenario will have an adverse impact on our sales in this market for the foreseeable future.

Thin-film solar manufacturing process for copper indium gallium selenide ("CIGS") and cadmium telluride ("CdTe"), will drive increased capacity as the technology matures; therefore, the relative market share of thin-film renewables in CIGS and CdTe should remain constant for the foreseeable future. Our power conversion technologies for both AC and DC sputtering are well-positioned in these markets and we will benefit from increased demand due to more rigorous customer requirements and an increased manufacturing focus on production output and costs relative to yield.

INDUSTRIAL MARKETS

Throughout 2012, demand for our products used in many industrial thin-film coating markets increased, particularly in industrial manufacturing areas for products such as automotive parts, machine tools, electro-magnetic interference (“EMI”) films, and optical and tribilogical coatings. We expect this demand to continue in 2013. The acquisition of the Solvix product line of industrially hardened DC, pulsed DC and arc supplies strengthens our position in these markets. The Solvix products will also allow us to participate in emerging, precision hard-coating markets as hardware manufacturers in these markets seek longer lasting films, improved process control and require more flexibility to address diverse hard coating applications.

Table Of Contents

INVERTER

Global power needs are expected to grow significantly in the next ten years. To meet these demands, suppliers and users of electricity are continuously seeking renewable sources of energy. This has resulted in growth opportunities in the solar energy market. Continued advances in inverter technology and greater scale has made solar energy more economically viable and resulted in more rapid expansion of its use worldwide. Growth in multi-megawatt projects is expected to continue, particularly in North America. Canada has adopted feed-in tariffs that will make these projects even more attractive to investors and utilities. Although certain tax incentives in the United States expired at the end of 2011, we have continued to see investment in large utility-scale projects.

Results of Operations

Our analysis presented below is organized to provide the information we believe will facilitate an understanding of our historical performance and relevant trends going forward. Our results of operations include the operating results of PV Powered for the full years ended December 31, 2012 and December 31, 2011 and the period May 3, 2010 through December 31, 2010. Results of operations include the results of Solvix for the period November 8, 2012 through December 31, 2012. 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 2012

In January 2011, management announced the creation of two focused business units within the Company, Thin Films and Solar Energy. 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 primarily on 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 without significant cost and effort. Therefore, except for revenue, segment information based on the two new business units for 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:

	Years Ended December 31,		
	2012	2011	2010
	(In thousands)		
Sales	$451,931	$516,799	$459,414
Gross profit	167,746	205,157	199,199
Operating expenses	140,372	155,906	134,011
Operating income	27,374	49,251	65,188
Other income	2,432	1,217	2,221
Income from continuing operations before income taxes	29,806	50,468	67,409
Provision for income taxes	9,630	13,614	13,816
Income from continuing operations, net of income taxes	$20,176	$36,854	$53,593

Table Of Contents

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

	Years Ended December 31,		
	2012	2011	2010
Sales	100.0 %	100.0 %	100.0 %
Gross profit	37.1 %	39.7 %	43.4 %
Operating expenses	31.2 %	30.2 %	29.2 %
Operating income	5.9 %	9.5 %	14.2 %
Other income	0.5 %	0.3 %	0.5 %
Income from continuing operations before income taxes	6.4 %	9.8 %	14.7 %
Provision for income taxes	2.1 %	2.6 %	3.0 %
Income from continuing operations, net of income taxes	4.3 %	7.2 %	11.7 %

SALES

The following tables summarize annual net sales, and percentages of net sales, by segment for each of the years ended 2012, 2011, and 2010:

	Years Ended December 31,			Increase/ (Decrease)		Percent Change	
	2012	2011	2010	2012 v. 2011	2011 v. 2010	2012 v. 2011	2011 v. 2010
	(In thousands)						
Thin Films:							
Semiconductor capital equipment market	$134,216	$146,175	$174,404	$(11,959)	$(28,229)	(8.2)%	(16.2)%
Non-semiconductor capital equipment	51,023	130,378	131,138	(79,355)	(760)	(60.9)%	(0.6)%
Global Support	50,096	52,061	48,154	(1,965)	3,907	(3.8)%	8.1 %
Total Thin Films	235,335	328,614	353,696	(93,279)	(25,082)	(28.4)%	(7.1)%
Solar Energy	216,596	188,185	105,718	28,411	82,467	15.1 %	78.0 %
Total sales	$451,931	$516,799	$459,414	$(64,868)	$57,385	(12.6)%	12.5 %

	Years Ended December 31,		
	2012	2011	2010
Thin Films:			
Semiconductor capital equipment market	29.7 %	28.3 %	38.0 %
Non-semiconductor capital equipment	11.3 %	25.2 %	28.5 %
Global Suppoirt	11.1 %	10.1 %	10.5 %
Total Thin Films	52.1 %	63.6 %	77.0 %
Solar Energy	47.9 %	36.4 %	23.0 %
Total sales	100.0 %	100.0 %	100.0 %

Total Sales

Total sales for the twelve months ended December 31, 2012 decreased 12.6% to $451.9 million from $516.8 million for the twelve months ended December 31, 2011. The decrease in sales was driven by a significant decline in capital spending in all the thin-film markets that we serve. Although there was softness in the semiconductor market throughout 2012, the non-semiconductor market, particularly flat panel displays and thin film renewables, was the primary driver behind the decline in sales from 2011. Excess manufacturing capacity and overall uncertainty in these markets significantly reduced demand in late 2011 and throughout 2012. The decline in sales for our Thin Films business unit was partially offset by increased sales in Solar Energy, which were driven by increased sales in the utility market.

Total sales increased 12.5% to $516.8 million in 2011 as compared to $459.4 million in 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

Table Of Contents

global economy, caused by lower consumer spending on products such as desktop computers, laptops, and high definition flat panel televisions.

Thin Films

Results for Thin Films for the twelve months ended December 31, 2012, 2011, and 2010 are as follows (in thousands):

	Years Ended December 31,		
	2012	2011	2010
Sales	$235,335	$328,614	$353,696
Operating Income	22,804	68,241	

2012 SALES COMPARED TO 2011

Thin Film sales for 2012 declined 28.4% as compared to 2011 reflecting continued weakness in the semiconductor markets along with significant declines in the flat panel display and solar panel markets as described above.

In 2012, sales in our thin-film semiconductor market decreased 8.2% to $134.2 million, or 29.7% of sales, from $146.2 million, or 28.3% of sales in 2011. In late 2011, capital expansion by our customer's end users began to slow in the semiconductor market and foundry utilization rates have continued to remain lower throughout 2012 than previous levels. Current market expectations indicate that capital spending will continue to remain low, therefore we expect revenues in this market to remain largely flat with optimism for an increase in the second half of 2013.

Sales to the non-semiconductor capital equipment markets decreased 60.9% to $51.0 million, or 11.3% of sales in 2012, from $130.4 million, or 25.2% of sales in 2011. The markets that comprise our non-semiconductor capital equipment markets include flat panel display, thin film renewables, data storage, architectural glass, and other industrial thin-film manufacturing equipment markets. Our customers in these markets are predominantly large OEMs. Each of these markets was also adversely impacted by lower capital spending and factory utilization rates, although the impact in each was slightly different.

Sales to customers in the flat panel display market decreased 71.1% to $8.6 million, or 1.9% of total sales in 2012 as compared to $29.8 million, or 5.8% of total sales in 2011. A drop in overall demand for flat panel televisions resulted in production overcapacity in 2012. This, coupled with delays in technology transitions, negatively impacted sales to this market as manufacturers delayed further investment. We are optimistic that the transition to newer technologies will occur in 2013 resulting in higher sales in this market.

Sales to customers in the thin film renewables market decreased 90.6% to $4.8 million, or 1.1% of total sales in 2012 as compared to $50.5 million, or 9.8% of total sales in 2011. A worldwide excess of solar panel manufacturing capacity and inventory, particularly in the PRC, resulted in a significant decline in sales to the solar panel market. There has not been enough marketplace demand to absorb the high levels of worldwide inventory on hand resulting in competitive consolidation of a number of solar panel manufacturers. New investment is not anticipated in the foreseeable future as these market dynamics continue to play out. As a result, we expect sales to this market to remain low throughout 2013.

Global support revenue for 2012 decreased 3.8% to $50.1 million, or 11.1% of total sales, as compared to $52.1 million, or 10.1% of total sales in 2011. Although service activity levels were stable in most of our geographic regions, factory utilization rates in both the flat panel display and solar panel markets had a negative impact on our customer's maintenance budgets and the need for repairs. In June 2012, we ceased providing service for the gas flow control business that we sold in 2010. We expect demand for repair and preventive maintenance services to increase in the first half of 2013 as factory utilization rates in markets other than flat panel display and thin film renewables level out and maintenance budgets begin to increase.

2011 SALES COMPARED TO 2010

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 economic uncertainty tempered demand for consumer electronics, which drives capital spending throughout the markets we serve.

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

33

Table Of Contents

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.

In 2011, total sales to the non-semiconductor capital equipment markets were relatively flat at $130.4 million, or 25.2% of sales, in 2011 compared to $131.1 million, or 28.5% of sales, in 2010.

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.

In 2011, sales to customers in the thin film renewables market decreased 14.1% to $50.5 million, or 9.8% of total sales, as compared to $58.8 million, or 12.8% of total sales, in 2010. 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 thin film renewables.

In 2011, global support revenue increased 8.1% to $52.1 million, or 10.1% of total sales, compared to $48.2 million, or 10.5% of sales, in 2010. The increase in global support sales in 2011 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 $63.9 million or 14.1% of our sales in 2012; $68.0 million, or 13.1% of our sales in 2011; and $86.4 million, or 18.8%, of our sales in 2010. 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, 2012, 2011, and 2010 are as follows (in thousands):

	Years Ended December 31,		
	2012	2011	2010
Sales	$216,596	$188,185	$105,718
Operating income	14,003	4,323	

Solar Energy sales increased $28.4 million, or 15.1%, to $216.6 million in 2012, as compared to $188.2 million in 2011. Solar Energy comprised 47.9% of total sales in 2012 as compared to 36.4% in 2011. Large utility-scale projects continue to drive the increase in sales for Solar Energy. During 2012 we expanded our presence in Canada resulting in significant growth in sales for that market. As we continue to offer new products and provide high-efficiency inverters to our customers we are gaining traction in the utility space resulting in several large project wins. Although we expect continued growth in Solar Energy in 2013, we expect sales to be flat in the first quarter of 2013.

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.

GROSS PROFIT

Our gross profit was $167.7 million or 37.1% of revenue in 2012 compared to $205.2 million or 39.7% of revenue in 2011. The decrease in absolute dollars and as a percentage of sales is due to the decline in sales in the thin films markets. Our Thin Films business unit has higher gross margins than our Solar Energy business unit, resulting in a decline in gross margin as a percentage of sales when Thin Films sales decline as a percentage of total sales.

34

Table Of Contents

Gross profit was $205.2 million, or 39.7% of revenue in 2011 and $199.2 million, or 43.4% of revenue, in 2010. The increase in absolute dollars was 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 was 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.

OPERATING EXPENSE

The following table summarizes our operating expenses as a percentage of sales for the years ended 2012, 2011 and 2010:

	Years Ended December 31,								
	2012			2011			2010		
	(in thousands)								
Research and development	$58,076	12.9	%	$64,984	12.6	%	$56,604	12.3	%
Selling, general, and administrative	69,127	15.3	%	79,722	15.5	%	74,543	16.2	%
Amortization of intangible assets	5,696	1.3	%	3,852	0.7	%	2,864	0.6	%
Restructuring charges	7,473	1.7	%	7,348	1.4	%	—	—	%
Total operating expenses	$140,372	31.2	%	$155,906	30.2	%	$134,011	29.2	%

In response to significant declines in demand in many of the markets we serve, we initiated a plan in late 2011 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 and are substantially complete as December 31, 2012. The reductions in headcount and facilities closures along with other reductions in spending resulted in reduced operating expenses in 2012 as compared to 2011.

Operating expenses increased in 2011 as compared to 2010 due to a full year of expenses related to the purchase of PV Powered and increased spending in our production facilities in 2010, which 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 the restructuring plan described above. 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 rapid increase in demand in 2010 in the markets we serve 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, 2012 decreased $6.9 million from the same period in 2011. The decrease is primarily the result of a full year of lower personnel expenses as a result of headcount reductions under our restructuring plan. The strategic initiatives that began in late 2011 and were completed in 2012 involved consolidating facilities and engineer teams and activities to be closer to our customers.

The increase in research and development expenses of $8.4 million in the twelve months ended December 31, 2011 as compared to the same period in 2010 was primarily the result of a full year of engineering expenses for PV Powered. We continued to invest in product development in both the Thin Film and Solar Energy businesses to meet customer needs.

35

Table Of Contents

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 decreased $10.6 million in the twelve months ended December 31, 2012 as compared to the same period in 2011. The decrease is primarily due to a significant reduction in bad debt expenses from 2011 coupled with recoveries of balances reserved in the prior year. Lower commissions due to lower sales, reductions in advertising and trade show expenses, and reductions in outside services also contributed to the decline in SG&A spending.

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.

Amortization Expense

Amortization expense was $5.7 million for the twelve months ended December 31, 2012, compared to $3.9 million for the same period ending December 31, 2011 and $2.9 million for the same period ending December 31, 2010. The increase of $1.8 million in 2012 is due primarily to amortization on in-process research and development that was placed into service in the first quarter of 2012. Also included in amortization for 2012 is a partial year of amortization on $8.2 million of amortizable intangible assets acquired with the purchase of Solvix. 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. Since the start of this plan, we have reduced the global workforce by 16.4%, consolidated our facilities by terminating or exiting several leases, and recorded impairments for assets no longer in use due to the restructuring of our business.

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, 2012, 2011, and 2010 was $0.6 million, $0.2 million, and $0.5 million, respectively. Interest rates have remained very low in 2012 resulting in interest income increasing only slightly due to higher cash balances in 2012.

Other income, net was $2.4 million in 2012, $1.2 million in 2011 and $2.2 million in 2010. The increase in other income, net in 2012 is due to the gain on the sale of fixed assets of $1.9 million related to ending our contract manufacturing agreement with HML. 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 Integration 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 2012 income tax provision of $9.6 million, or an effective tax rate of 32.3%. The effective rate differs from the federal statutory rate of 35% primarily due to the benefit of earnings in foreign jurisdictions which are subject to lower tax rates, a benefit from the federal alternative minimum tax credit, a domestic production activity benefit, offset by a net expense related to a change in the valuation allowance applicable to deferred tax assets.

We recorded a 2011 income tax provision of $13.6 million, or an effective tax rate of 27.0%. The effective tax rate differs from the statutory rate of 35% primarily due to the benefit of earnings in foreign jurisdictions which are subject to lower tax rates, a domestic production activity benefit, and the federal research and development tax credit.

Table Of Contents

We recorded a 2010 income tax provision of $13.8 million, or an effective tax rate of 20.5%. The effective tax rate differs from the statutory rate of 35% primarily due to the benefit of earnings in foreign jurisdictions which are subject to lower tax rates and the federal research and development tax credit.

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.

Pursuant to the American Taxpayer Relief Act of 2012, the federal research and development credit has been reenacted retroactively to January 1, 2012. As the law implementing this change was signed on January 3, 2013, we expect to record a discrete tax benefit, attributable to the 2012 retroactive period, of approximately $1.5 million during the first quarter of 2013. In addition, we expect the Act's extension of the federal research and development credit will favorably affect our 2013 estimated annual effective tax rate by approximately 2.7 percentage points as compared to 2012.

Discontinued Operations

On October 15, 2010, we completed the sale of our gas flow control business, which includes the Aera® mass flow control and related product lines to Hitachi Metals, Ltd., for $43.3 million. Assets and liabilities sold include, without limitation, inventory, real property in Hachioji, Japan, equipment, certain contracts, intellectual property rights related to the gas flow control business, and certain warranty liability obligations. During the fourth quarter of 2010, we recorded a $12.5 million gain on the asset disposition, net of $1.7 million in taxes. The results of continuing operations were reduced by the revenue and costs associated with the gas flow control business which are included in the Income (Loss) from Discontinued Operations, net of taxes, in our Consolidated Statements of Operations. In connection with the closing of this asset disposition, we entered into a Master Services Agreement and a Supplemental Transition Services Agreement pursuant to which we provided certain transition services until October 2011 and we became an authorized service provider for Hitachi in all countries other than Japan. As of May 31, 2012 we ceased providing contract manufacturing services to Hitachi and completed the sale of certain fixed assets related to that manufacturing. We do not anticipate any additional activity with Hitachi in respect of these assets that would materially impact our financial statements in the future.

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. Our operating activities are subject to 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, cash generated from current operations and availability under our Credit Facility (as defined below).

At December 31, 2012, we had $172.2 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.

On October 12, 2012, we entered into an agreement with Wells Fargo Bank, National Association which provides for a secured revolving credit facility ("Credit Facility") of up to $50.0 million. Borrowings under the Credit Facility are subject to a borrowing base based upon our accounts receivable and inventory and are available for various corporate purposes. The Credit Facility provides us further flexibility for execution of our strategic plans including acquisitions. For more information on the Credit Facility see Note 22 - Credit Facility of our Consolidated Financial Statements.

On October 30, 2012, we announced a $25.0 million share repurchase program authorized by our Board of Directors. The repurchase program will occur over the next twelve months, requires no minimum number of shares to be

repurchased, and may be discontinued at any time. No repurchases were made under this program through December 31, 2012.

Table Of Contents

CASH FLOWS

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

	Years Ended December 31,		
	2012	2011	2010
	(In thousands)		
Net cash provided by operating activities	$110,777	$38,095	$18,344
Net cash used in investing activities	(24,527)	(34,724)	(16,710)
Net cash provided by (used in) financing activities	(54,864)	(17,092)	1,376
Effect of currency translation on cash	(2,461)	446	(5,202)
Increase (decrease) in cash and cash equivalents	28,925	(13,275)	(2,192)
Cash and cash equivalents, beginning of the period	117,639	130,914	133,106
Cash and cash equivalents, end of the period	$146,564	$117,639	$130,914

2012 CASH FLOWS COMPARED TO 2011

Net cash provided by operating activities

Net cash provided by operating activities for the twelve months ended December 31, 2012 was $110.8 million, compared to $38.1 million for the same period ended December 31, 2011. The increase of $72.7 million in net cash flows from operating activities is primarily due to the collection of accounts receivable during 2012. Although sales declined in 2012 approximately 12.6%, accounts receivable balances declined nearly 36.6% as a result of improved collection efforts.

Net cash used in investing activities

Net cash used in investing activities for the twelve months ended December 31, 2012 was $24.5 million, a decrease in cash used of $10.2 million from the prior year. Investments in marketable securities used less cash in 2012 than in 2011 as cash was needed to fund the acquisition of Solvix. Investments in marketable securities used $1.2 million in 2012 as compared to $15.8 million in 2011, a difference of $14.7 million. The acquisition of Solvix used $15.3 million of cash.

Capital expenditures in 2012 were significantly lower compared to 2011 as the prior year 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, 2012 was $54.9 million, a $37.8 million increase from $17.1 million in the same period of 2011. In November 2011 we announced a $75.0 million share repurchase program, of which $57.1 million was used to repurchase 4.7 million shares in 2012 compared to $17.9 million to repurchase 1.7 million shares in 2011. The repurchase program was completed during the second quarter of 2012. The exercise of stock options provided $3.7 million of cash in 2012 as compared to $2.0 million in 2011.

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 $19.8 million increase 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 flows used in investing activities

Net cash used in investing activities for the twelve months ended December 31, 2011 was $34.7 million, an increase of cash used of $18.0 million from the prior year. The additional cash used for investing activities in 2011 is a result of an increase in the purchase 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.

38

Table Of Contents

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.

Net cash flows 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. As of June 30, 2012, we have completed this repurchase program. Total shares repurchased are 6.4 million shares of our common stock for $75.0 million.

Effect of currency translation on cash

The effect of foreign currency translations on cash changed $2.9 million to a $2.5 million negative impact for the year ended December 31, 2012 compared to a $0.4 million positive impact for the year ended December 31, 2011. The net 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 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, 2012, 2011 and 2010 are as follows:

		Years Ended December 31,		
From	To	2012	2011	2010
CNY	USD	1.2%	4.7%	3.4%
EUR	USD	2.0%	(3.2)%	(7.2)%
JPY	USD	(10.7)%	5.0%	13.7%
KRW	USD	9.3%	(3.4)%	3.0%
TWD	USD	4.6%	(4.0)%	9.7%
GBP	USD	4.9%	(0.2)%	(4.3)%

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, 2012:

Contractual Obligations:	Total	Less than 1 year	1 -3 years	3-5 years	More than 5 years
	(In thousands)				
Operating lease obligations	$23,654	$5,145	$8,368	$3,532	$6,609
Purchase obligations	54,400	54,400	—	—	—
	$78,054	$59,545	$8,368	$3,532	$6,609

As of December 31, 2012, we have $12.8 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

Table Of Contents

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, credit facility, 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 and credit facility. 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, 2012, our investments consisted primarily of treasury bills, certificates of deposit, corporate bonds, municipal 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.

We had no debt outstanding as of December 31, 2012. Our only debt instrument at December 31, 2012 was the Credit Facility, which would be subject to variable interest rates and principal payments should we decide to borrow against it. However, assuming a full drawdown on the revolving credit facility, and holding other variables constant, a hypothetical immediate one percentage point change in interest rates would be expected to have an impact on pre-tax earnings and cash flows of approximately $0.5 million over the course of 12 months.

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.

Table Of Contents

ITEM 8. FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA

INDEX TO CONSOLIDATED FINANCIAL STATEMENTS

Table Of Contents

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, 2012 and 2011, and the related consolidated statements of operations, comprehensive income, shareholders' equity, and cash flows for each of the three years in the period ended December 31, 2012. 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, 2012 and 2011, and the results of their operations and their cash flows for each of the three years in the period ended December 31, 2012 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, 2012, 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 6, 2013 expressed an unqualified opinion.

/s/ GRANT THORNTON LLP

Denver, Colorado
March 6, 2013

Table Of Contents

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

Board of Directors and Shareholders
Advanced Energy Industries, Inc.

We have audited the internal control over financial reporting of Advanced Energy Industries, Inc. (a Delaware corporation) and subsidiaries (the “Company”) as of December 31, 2012, 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, 2012 (“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, the Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2012, 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 financial statements of the Company as of and for the year ended December 31, 2012, and our report dated March 6, 2013 expressed an unqualified opinion on those financial statements.

/s/ GRANT THORNTON LLP

Denver, Colorado
March 6, 2013

Table Of Contents

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

	December 31,	
	2012	2011
ASSETS		
CURRENT ASSETS:		
Cash and cash equivalents	$146,564	$117,639
Marketable securities	25,683	25,567
Accounts receivable, net of allowances of $4,589 and $6,796, respectively	83,914	132,485
Inventories, net of reserves of $14,629 and $13,614, respectively	81,482	80,283
Deferred income tax assets	19,477	9,014
Income taxes receivable	4,315	13,826
Other current assets	9,075	11,672
Total current assets	370,510	390,486
Property and equipment, net	39,523	42,338
Deposits and other	7,529	8,959
Goodwill	60,391	46,515
Other intangible assets, net	46,209	43,438
Deferred income tax assets	13,998	1,642
Total assets	$538,160	$533,378
LIABILITIES AND STOCKHOLDERS' EQUITY		
CURRENT LIABILITIES:		
Accounts payable	$41,044	$44,828
Income taxes payable	11,029	3,310
Accrued payroll and employee benefits	11,675	9,184
Accrued warranty expense	7,419	8,433
Other accrued expenses	15,399	10,800
Customer deposits	2,080	14,689
Total current liabilities	88,646	91,244
Deferred income tax liabilities	16,832	6,475
Uncertain tax positions	13,669	16,404
Accrued warranty expense	7,378	6,286
Other long-term liabilities	24,004	5,630
Total liabilities	150,529	126,039
Commitments and contingencies (Note 17)	—	—
STOCKHOLDERS' EQUITY:		
Preferred stock, $0.001 par value, 1,000 shares authorized, none issued and outstanding	—	—
Common stock, $0.001 par value, 70,000 shares authorized; 37,991 and 41,956 issued and outstanding, respectively	38	42
Additional paid-in capital	212,520	254,003
Retained earnings	145,348	124,767
Accumulated other comprehensive income	29,725	28,527
Total stockholders' equity	387,631	407,339
Total liabilities and stockholders' equity	$538,160	$533,378

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

44

Table Of Contents

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

	Years Ended December 31,		
	2012	2011	2010
SALES	$451,931	$516,799	