Ascent Solar Technologies, Inc.
Form 10-K
March 28, 2014
Table of Contents

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

FORM 10-K

(Mark One)

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

For the fiscal year ended December 31, 2013

or

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

For the Transition Period from to

Commission File No. 001-32919

Ascent Solar Technologies, Inc.
(Exact name of registrant as specified in its charter)

Delaware	20-3672603
(State or other jurisdiction of incorporation or organization)	(I.R.S. Employer Identification No.)
12300 Grant Street, Thornton, CO	80241
(Address of principal executive offices)	(Zip Code)

Registrant's telephone number including area code: 720-872-5000

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

Title of Each Class	Name of Each Exchange on Which Registered
Common Stock, $0.0001 par value per share	The NASDAQ Global 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 x

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

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 x 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 (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files). x Yes o No

Table of Contents

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 definitions of “large accelerated filer,” “accelerated filer” and “smaller reporting company” in Rule 12b-2 of the Exchange Act:

Large accelerated filer	o	Accelerated filer	o
Non-accelerated filer	o (Do not check if a smaller reporting company)	Smaller reporting company	x

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

As of June 30, 2013, the last business day of the registrant’s most recently completed second fiscal quarter, the aggregate market value of the registrant’s common stock held by non-affiliates was approximately $29.7 million based upon the last reported sale price of the registrant’s common stock on that date as reported by NASDAQ.

As of March 5, 2014, there were 68,308,792 shares of our common stock issued and outstanding.

Table of Contents

ASCENT SOLAR TECHNOLOGIES, INC.
Form 10-K Annual Report
for the Fiscal Year ended December 31, 2013
Table of Contents

		Page
PART I		
Item 1.	Business	1
Item 1A.	Risk Factors	9
Item 1B.	Unresolved Staff Comments	19
Item 2.	Properties	19
Item 3.	Legal Proceedings	19
Item 4.	Mine Safety Disclosures	19
PART II		
Item 5.	Market For Registrant's Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities	19
Item 6.	Selected Financial Data	20
Item 7.	Management's Discussion and Analysis of Financial Condition and Results of Operations	21
Item 7A.	Quantitative and Qualitative Disclosures About Market Risk	29
Item 8.	Financial Statements and Supplementary Data	30
Item 9.	Changes in and Disagreements With Accountants on Accounting and Financial Disclosure	30
Item 9A.	Controls and Procedures	30
Item 9B.	Other Information	31
PART III		
Item 10.	Directors, Executive Officers and Corporate Governance	31
Item 11.	Executive Compensation	31
Item 12.	Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters	31
Item 13.	Certain Relationships and Related Transactions, and Director Independence	31
Item 14.	Principal Accounting Fees and Services	32
PART IV		
Item 15.	Exhibits, Financial Statement Schedules	32
	Signatures	

Table of Contents

FORWARD-LOOKING STATEMENTS

This Annual Report on Form 10-K includes “forward-looking statements” that involve risks and uncertainties. Forward-looking statements include statements concerning our plans, objectives, goals, strategies, future events, future net sales or performance, capital expenditures, financing needs, plans or intentions relating to acquisitions, business trends and other information that is not historical information and, in particular, appear under headings including “Management’s Discussion and Analysis of Financial Condition and Results of Operations” and “Business.” When used in this Annual Report, the words “estimates,” “expects,” “anticipates,” “projects,” “plans,” “intends,” “believes,” “forecasts,” “foresees,” “likely,” “may,” “should,” “goal,” “target,” and variations of such words or similar expressions are inte to identify forward-looking statements. All forward-looking statements are based upon information available to us on the date of this Annual Report.

These forward-looking statements are subject to risks, uncertainties and other factors, many of which are outside of our control, that could cause actual results to differ materially from the results discussed in the forward-looking statements, including, among other things, the matters discussed in this Annual Report in the sections captioned “Risk Factors” and “Management’s Discussion and Analysis of Financial Condition and Results of Operations.” Factors you should consider that could cause these differences are:

- Our limited operating history and lack of profitability;
- Our ability to successfully design, manufacture and sell our EnerPlex™ line of consumer products;
- Our ability to develop demand for, and sales of, our products;
- Our ability to attract and retain qualified personnel to implement our business plan and corporate growth strategies;
- Our ability to develop sales, marketing and distribution capabilities;
- Our strategic alliance with TFG Radiant results in the design, manufacture and sale of sufficient products to achieve profitability;
- Our ability to successfully develop and maintain strategic relationships with key partners, including OEMs, system integrators, distributors, retailers and e-commerce companies, who deal directly with end users in our target markets;
- The accuracy of our estimates and projections;
- Our ability to secure additional financing to fund our short-term and long-term financial needs;
- Our ability to maintain the listing of our common stock on the NASDAQ Global or Capital Market;
- The commencement, or outcome, of legal proceedings against us, or by us, including ongoing ligation proceedings;
- Changes in our business plan or corporate strategies;
- The extent to which we are able to manage the growth of our operations effectively, both domestically and abroad, whether directly owned or indirectly through licenses;
- The supply, availability and price of equipment, components and raw materials, including the elements needed to produce our photovoltaic modules;
- Our ability to expand and protect the intellectual property portfolio that relates to our consumer electronics, photovoltaic modules and processes;
- General economic and business conditions, and in particular, conditions specific to consumer electronics and the solar power industry; and
- Other risks and uncertainties discussed in greater detail in the section captioned "Risk Factors."

There may be other factors that could cause our actual results to differ materially from the results referred to in the forward-looking statements. We undertake no obligation to publicly update or revise forward-looking statements to reflect subsequent events or circumstances after the date made, or to reflect the occurrence of unanticipated events, except as required by law.

References to “we,” “us,” “our,” “Ascent,” “Ascent Solar” or the “Company” in this Annual Report mean Ascent Solar Technologies, Inc.

Table of Contents

5

Table of Contents

PART I

Item 1. Business

Business Overview

We are a development stage company formed in October 2005 to commercialize flexible photovoltaic ("PV") modules using proprietary technology. Our technology was initially developed at ITN Energy Systems, Inc. ("ITN") beginning in 1994 and subsequently assigned and licensed to us. Our proprietary manufacturing process deposits multiple layers of materials, including a thin film of highly efficient copper-indium-gallium-diselenide ("CIGS") semiconductor material, on a flexible, lightweight, high tech plastic substrate using a roll-to-roll manufacturing process and then laser patterns the layers to create interconnected PV cells, or PV modules, in a process known as monolithic integration. We believe that our technology and manufacturing process, which results in a lighter, flexible module package, provides us with unique market opportunities relative to both the crystalline silicon ("c-Si") based PV manufacturers that currently lead the PV market, as well as other thin film PV manufacturers that use substrate materials such as glass, stainless steel or other metals that can be heavier and more rigid than plastics.

We believe that the use of CIGS on a flexible, durable, lightweight, high tech plastic substrate will allow for unique and seamless integration of our PV modules into a variety of electronic products, building materials, defense, transportation and space applications, as well as other products and applications that may emerge. For markets that place a high premium on weight, such as consumer electronics, rooftop, defense, space, near space, and aeronautic markets, we believe our materials provide attractive increases in power-to-weight ratio, and we believe that our materials have higher power-to-area ratios and voltage-to-area ratios than competing flexible PV thin film technologies. These metrics will be critical as we position ourselves to compete in commercial rooftop applications at the appropriate time in the future. We believe that our lightweight flexible technology is transformational in nature, and will provide us advantages in serving the building applied photovoltaic ("BAPV") and building integrated photovoltaic ("BIPV") markets in the future.

Currently, we are producing consumer oriented products with a focus on charging devices powered by or enhanced by our solar modules. Products in these markets are priced based on the overall product value proposition rather than a commodity-style price per watt basis. We continue to develop new consumer products and we have adjusted our utilization of our equipment to meet our near term forecast sales.

Product History

In March 2008, we demonstrated initial operating capacity of our first production line by beginning production trials as an end to end integrated process. Early initial operating capacity production trials resulted in average thin film device efficiencies of 9.5% and small area monolithically integrated module efficiencies of over 7.0%. During 2008, optimization trials resulted in thin film device efficiencies in the 9.5% to 11.5% range and corresponding module efficiencies in the 7.0% to 9.0% range. The test modules measured approximately 15 centimeters wide by 30 centimeters long. During the first quarter of 2009, we began limited production of monolithically integrated flexible CIGS modules in our initial production line. Our primary business model, at that time, was based upon mass production of solar modules of varying lengths, sizes and configurations. We provided sample modules to potential customers and development partners in various industries to explore integration of our products into new applications. In July 2009, we obtained independent verification by the U.S. Department of Energy's National Renewable Energy Laboratory ("NREL") that our modules measured 10.4% in conversion efficiency. The modules tested at NREL were approximately 15 centimeters wide by 30 centimeters long. In October 2009, NREL verified our achievement of a manufacturing milestone of 14.0% cell efficiency. We also announced a peak efficiency of 11.4% for CIGS modules. Later, in December 2010, we achieved 12.1% module efficiency on the same form factor. In October 2010, we completed internal qualification testing of a flexible packaging solution which successfully passed the rigorous standard of one thousand (1,000) hours of damp heat testing (85% relative humidity and 85° C temperature) guideline set forth by International Electrotechnical Commission ("IEC") 61646 standards for performance and long term reliability of thin film solar modules.

In February 2010, three of our product configurations were certified by an independent laboratory on a variety of U.S. Department of Defense ("DOD") rugged standards known as MIL-STD-810G. In October 2010, we completed full external certification under IEC 61646 at an independent laboratory of a two meter module. Achieving this

certification is required for BIPV and BAPV applications used in commercial, industrial and residential rooftop markets. Certification activities will continue as required as we introduce new products and make changes or improvements to our already certified products.

In 2010, we received an award from R&D Magazine and were included in their list of the 100 Most Innovative Technologies based on our process of monolithic integration on polyimide substrate. In 2011, Time Magazine selected us as one of the 50 Best Inventions of the year.

Table of Contents

In 2012, we accelerated our transition to a business model focusing on developing PV integrated consumer electronics. In June of 2012, we launched our new line of consumer products under the EnerPlex™ brand, and introduced our first product, the Surfr™, a battery and solar case for the Apple® iPhone® 4/4S smart phone, featuring our ultra-light CIGS thin film technology integrated directly into the case. The case incorporates our ultra-light and thin PV module into a sleek, protective iPhone 4/4S case, along with a thin, life extending, battery. The charger adds minimal weight and size to an iPhone smartphone, yet provides supplemental charging when needed. In August of 2012, we announced the launch of the second version of the Surfr for the Samsung® Galaxy S® III, which provides 85% additional battery life.

In December 2012, we launched the EnerPlex Kickr™ and EnerPlex Jumpr™ product series. The Kickr IV is an extremely portable, compact and durable solar charging device, approximately seven inches by seven inches when folded, and weighs less than half a pound. The Kickr IV provides 6.5 watts of regulated power that can help charge phones, digital cameras, and other small USB enabled devices. The Kickr IV is ideal for outdoor activities such as camping, hiking and mountain climbing as well as daily city use. To complement the Kickr IV, we also released the Jumpr series of portable power banks in December of 2012. The Jumpr series provides a compact power storage solution for those who need to take the power of the sun with them while on the go.

During 2013, the EnerPlex brand rapidly expanded with the addition of two new product series as well as over fifteen new products. In the beginning of 2013, we introduced further additions to the Jumpr line of portable power banks; releasing the Jumpr Mini and Jumpr Stack in August and the Jumpr Max in September. The latest additions to the Kickr line of portable solar chargers, the Kickr I and Kickr II, were introduced in August at the Outdoor Retailer show. Furthermore, in October 2013, we released our first series of solar integrated backpacks, the Packr, for consumer use. The Packr is a fashion forward and functional pack perfect for charging mobile electronic devices while on the go. Also in October of 2013, we introduced the Surfr battery and solar case for the Samsung Galaxy S® 4, and in December, we introduced the Surfr battery and solar case for Apple's iPhone® 5. In addition to releasing products in our flagship product lines, we added an assortment of useful accessories, all of which can be integrated into the EnerPlex ecosystem of products; such as the LED wand which can be easily plugged into a Jumpr power bank to provide hours of light, or the Travel Adaptor, which enables consumers to charge up their Jumpr power banks from a traditional outlet anywhere in the world.

Throughout 2013, we aggressively pursued new distribution channels for the EnerPlex brand; these activities have led to placement in a variety of high-traffic ecommerce venues such as www.walmart.com, www.brookstone.com, www.newegg.com as well as many others including our own e-commerce platform at www.goenerplex.com. The April 2013 placement of EnerPlex products at Fry's Electronics, a US West Coast consumer electronics retailer, represented the company's first domestic retail presence. EnerPlex products are carried in all of Fry's 34 stores across 9 states. Each store is provided with EnerPlex branded merchandising assets to highlight the uniqueness of our product lines.

In addition, we now have a total of 9 kiosks in operation. In 2014, we expect to expand to over 20 kiosks across the United States. We believe this multi-faceted strategy will give the EnerPlex™ brand the broadest exposure for the amount of investment and make our products immediately available to large numbers of consumers.

We continue to design and manufacture PV integrated consumer electronics as well as portable power applications for commercial and military users. Due to the high durability enabled by the monolithic integration employed by our technology, the capability to customize modules into different form factors and the industry leading light weight and flexibility provided by our modules, we believe that the potential applications for our products are numerous.

Commercialization and Manufacturing Strategy

We manufacture our products by affixing a thin CIGS layer to a flexible, plastic substrate using a large format, roll-to-roll process that permits us to fabricate our flexible PV modules in an integrated sequential operation. We use proprietary monolithic integration techniques which enable us to form complete PV modules with less or no costly back end assembly of inter cell connections. Traditional PV manufacturers assemble PV modules by bonding or soldering discrete PV cells together. This manufacturing step typically increases manufacturing costs and at times proves detrimental to the overall yield and reliability of the finished product. By reducing or eliminating this added step using our proprietary monolithic integration techniques, we believe we can achieve cost savings in, and increase

the reliability of, our PV modules. All tooling necessary for us to meet our near term production requirements is installed in our Thornton, Colorado plant. In 2012, we further revised our strategy to focus on applications for emerging and specialty markets, including off grid, military and defense and consumer oriented products. Long term, we believe that the BIPV/BAPV markets will evolve and become an attractive market.

On February 1, 2012, we announced the appointment of Victor Lee as President and Chief Executive Officer. Mr. Lee has served on our Board since November 2011. Mr. Lee is the Managing Director of Tertius Financial Group Pte Ltd, the joint venture partner with Radiant Group in TFG Radiant.

Table of Contents

The addition of TFG Radiant as a major shareholder in August 2011 has significantly improved our capabilities on a number of fronts. TFG Radiant's domicile in Shenzhen, China provides us access to high quality, low cost contract manufacturing in Asia through the expansion of TFG Radiant's existing relationships developed through many years of successful operation in China. Integrating these suppliers into our supply chain enables us to bring our products to market faster. TFG Radiant also provides a global product perspective that significantly improves the product design activities of our Thornton, Colorado designers as they collaborate with designers in Asia. We continue to integrate and improve the design-to-manufacture process where we manufacture modules in our US plant, ship them to Asia for completion into finished goods at low cost and then ship products to all markets we will serve.

On July 2, 2013, we entered into a framework agreement for the establishment of a joint venture with the Government of the Municipal City of Suqian in Jiangsu Province, China ("Suqian"). On December 28, 2013 we signed the definitive agreement with Suquian which further specified the terms and time frame of the joint venture.

Under this definitive agreement, Suqian will provide cash of approximately $32.5 million, as well as the five year rent-free use of approximately 331,000 square feet of factory & office space in the Suqian Economic and Industrial Development Science Park. The JV will build a 100MW factory over six years to manufacture Ascent's proprietary thin-film Copper-Indium-Gallium-Selenium (CIGS) photovoltaic modules on flexible polyimide in addition to related consumer products.

Ascent shall purchase the factory within the first 5 years at the initial construction cost, and will also purchase Suqian's ownership interest in the JV within 5 years at 1.5 times of Suqian's cash cost.

In the initial phase of the project during the first half of 2014, Ascent and Suqian will form a JV in which Suqian will inject approximately $4.8 million in cash and have majority interest of 75%. Ascent shall inject approximately $1.6 million in cash and hold a minority interest of 25%. Subsequently, during 2014, Suqian will further inject the balance of the committed $32.5 million while Ascent will contribute its proprietary technology and intellectual property, as well as certain equipment from its Colorado facility, thereby increasing Ascent's shareholdings progressively up to 80% ownership. By the first quarter of 2016, the JV is expected to operate an end-to-end manufacturing plant of 25 megawatts capacity and related consumer products.

Suqian will also provide a package of additional incentives including:

1.A 5-year corporate tax holiday and a further 50% tax rebate over the following 5 years,

2.Full rebate of value-added tax for the first 2 years and 50% rebate for the subsequent 3 years,

3.Free accommodations for up to 3 years for key scientists, engineers and management personnel of the JV.

As phase two of this program is implemented, Ascent will have the option to purchase approximately 215,000 square feet of land zoned for commercial usage at a favorable price at 10% above the government's prevailing cost.

We plan to continue the development of our current PV technology to increase module efficiency, improve our manufacturing tooling and process capabilities and reduce manufacturing costs. We also plan to continue to take advantage of research and development contracts to fund a portion of this development.

Advantages of CIGS on a Flexible Plastic Substrate

Thin film PV solutions differ based on the type of semiconductor material chosen to act as a sunlight absorbing layer, and also on the type of substrate on which the sunlight absorbing layer is affixed. To the best of our knowledge, we believe we are the only company in the world currently focused on commercial scale production of PV modules using CIGS on a flexible, plastic substrate with monolithic integration. We utilize CIGS as a semiconductor material because, at the laboratory level, it has a higher demonstrated cell conversion efficiency than amorphous silicon ("a-Si") and cadmium telluride ("CdTe"). We also believe CIGS offers other compelling advantages over both a-Si and CdTe, including:

- CIGS versus a-Si: Although a-Si, like CIGS, can be deposited on a flexible substrate, its conversion efficiency, which already is generally much lower than that of CIGS, measurably degrades when it is exposed to ultraviolet light, including natural sunlight. To mitigate such degradation, manufacturers of a-Si solar cells are required to implement measures that add cost and complexity to their manufacturing processes.
- CIGS versus CdTe: Although CdTe modules have achieved conversion efficiencies that are generally comparable to CIGS in production, we believe CdTe has never been successfully applied to a flexible substrate on a commercial scale. We believe the use of CdTe on a rigid, transparent substrate, such as glass, makes CdTe unsuitable for a number

of the applications. We also believe CIGS can achieve higher conversion efficiencies than CdTe in production.

Table of Contents

Our choice of substrate material further differentiates us from other thin film PV manufacturers. We believe the use of a flexible, lightweight, insulating substrate that is easier to install provides clear advantages for our target markets, especially where rigid substrates are unsuitable. We also believe our use of a flexible, plastic substrate provides us significant cost advantages because it enables us to employ monolithic integration techniques on larger components, which we believe are unavailable to manufacturers who use flexible, metal substrates. Accordingly, we are able to significantly reduce part count, thereby reducing the need for costly back end assembly of inter cell connections. As the only company, to our knowledge, focused on the commercial production of PV modules using CIGS on a flexible, plastic substrate with monolithic integration, we believe we have the opportunity to address the consumer electronics, defense, aerospace, transportation, off grid, portable power and other weight-sensitive markets with transformational high quality, value added product applications. It is these same unique features and our overall manufacturing process that enables us to produce consumer products that enables our consumer products to be extremely robust, light and flexible.

Competitive Strengths

We believe we possess a number of competitive strengths that provide us with an advantage over our competitors.

- We are a pioneer in CIGS technology with a proprietary, flexible, lightweight, high efficiency PV thin film product that positions us to penetrate a wide range of attractive high value added markets such as consumer products, off grid, portable power, transportation, defense, aerial, BIPV/BAPV, and other markets. By applying CIGS to a flexible plastic substrate, we have developed a PV module that is efficient, lightweight and flexible, providing unique opportunities for integration into building material products, such as roofing membranes, shingles, siding, facades, metal and composite panels. Commercial rooftops alone are a major segment of the world solar market. The market for electronic components, such as electronic packages, casings and accessories, as well as defense portable power systems, transportation integrated applications and space and near-space solar power application solutions, also represent a significant premium market for the company. Relative to our thin film competitors, we believe our advantage in thin film CIGS on plastic technology provides us with a superior product offering for these strategic market segments.
- We have the ability to manufacture PV modules for different markets and for customized applications without altering our production processes. Our ability to produce PV modules in customized shapes and sizes, or in a variety of shapes and sizes simultaneously, without interrupting our production flow, provides us with flexibility in addressing target markets and product applications, and allows us to respond quickly to changing market conditions. Many of our competitors are limited by their technology and/or their manufacturing processes to a more restricted set of product opportunities.
- Our integrated, roll-to-roll manufacturing process and proprietary monolithic integration techniques provide us a potential cost advantage over our competitors. Historically, manufacturers have formed PV modules by manufacturing individual solar cells and then interconnecting them. Our large format, roll-to-roll manufacturing process allows for integrated continuous production. In addition, our proprietary monolithic integration techniques allow us to utilize laser patterning to create interconnects, thereby creating PV modules at the same time we create PV cells. In so doing, we are able to reduce or eliminate an entire back end processing step, saving time as well as labor and manufacturing costs relative to our competitors.
- Our lightweight, powerful, and durable solar panels provide a performance advantage over our competitors. For consumer applications where a premium is placed on the weight and profile of the product such as phone cases, our ability to integrate our PV modules into portable packages and cases that offer the customer a lightweight and durable solution for all their portable electronics.
- Our strategic relationship with TFG Radiant provides us with direct access to a potentially large customer base in the East Asia market, sophisticated low cost contract manufacturing suppliers and consumer product design capability. TFG Radiant is a joint venture of Radiant Group, a Chinese conglomerate in construction and real estate, and Tertius Financial Group, a private investment firm based in Singapore. The Radiant Group, with more than 3,000 personnel, operates various businesses across China, Indonesia, Singapore and Malaysia, including metal roofing and facades, import/export trading, real estate investment, project management and consultation, new energy development, manufacturing and distribution and gold mining.

- Our proven research and development capabilities position us to continue the development of next generation PV modules and technologies. Our ability to produce CIGS based PV modules on a flexible plastic substrate is the result of a concerted research and development effort that began more than twenty years ago. We continue to pursue research and development in an effort to drive efficiency improvements in our current PV modules and to work toward next generation technologies and additional applications.

Table of Contents

- Our manufacturing process can be differentiated into two distinct functions; a front end module manufacturing process and a back end packaging process. Our ability to produce finished unpackaged rolls of CIGS material for shipment worldwide to customers for encapsulation and integration into various products enhances our ability to work with partners internationally.

Markets and Marketing Strategy

In 2012, we shifted our strategic focus away from rooftop applications to consumer and specialty solar markets. This new strategy enables us to fully leverage the unique advantages of our technology including flexibility, toughness and attractive power to weight and power to area performance. It furthermore enables us to offer unique, differentiated solutions in large markets with less competition, and more attractive pricing. In the second half of 2012, we launched our EnerPlex line of personal power, portable solar solutions and accessories. This represented a significant paradigm shift for us and moved us into the realm of supplying complete consumer product solutions as opposed to strictly commercial solar modules. We also remain focused on specialty solar applications which can fully leverage the unique properties of our award winning CIGS technology. These include aerospace, military and transportation applications. Our marketing efforts in 2014 will be primarily focused on expanding consumer awareness of our EnerPlex brand. The EnerPlex™ brand presently includes solar and battery integrated smartphone cases (EnerPlex Surfr™), portable outdoor foldable solar chargers (EnerPlex Kickr™), solar integrated backpacks (EnerPlex Packr™), portable rechargeable power banks (EnerPlex Jumpr™) and complimentary accessories such as travel adapters, bluetooth speakers and USB charging cables. These products serve a variety of consumers requiring clean and practical, range extending power solutions for electronic devices either indoors or outdoors. Target consumers include frequent travelers, students, business professionals and those spending extended time outdoors away from the power grid (hunters, campers, park rangers, miners, construction workers, etc.). We will continue to expand the EnerPlex™ product line significantly in 2014, bringing an even wider set of portable power solutions to the market.

Our EnerPlex™ sales strategy includes sales directly to large retailers as well as through distributors who serve retailers. We are establishing key distributor relationships throughout the world, by territory, typically on a nonexclusive basis. In 2014, we plan to continue our expansion of distribution channels both in the U.S. and internationally. In early 2013, we established our e-commerce presence through www.goenerplex.com, where our retail customers can purchase our EnerPlex™ products and have them delivered directly from our warehouse. Our products are also available on a variety of third party e-commerce sites including www.amazon.com, www.walmart.com, www.newegg.com, www.frys.com, www.sears.com and several others. In 2013, we opened our first direct to consumer kiosks in Colorado located at shopping malls and Denver International Airport (DIA). In late 2013, we expanded into Southern California and Nevada and now have a total of 9 kiosks in operation. In 2014, we expect to expand to over 20 kiosks across the United States. We believe this multi-faceted strategy will give the EnerPlex™ brand the broadest exposure for the amount of investment and make our products immediately available to large numbers of consumers.

In the specialty markets segment, our modules can provide lightweight, high performance, durable power solutions for commercial transportation, automotive, aerospace, military and durable off grid solutions. In 2013, we were chosen to partner with Volvo for their Pure Tension Pavilion project where our revolutionary, flexible and lightweight CIGS solar modules were selected for integration into the Pavilion’s tensioned mesh membrane structure. In this segment, our marketing efforts will continue to focus on the formation of strategic relationships with key partners, including original equipment manufacturers (“OEMs”), system integrators, resellers and distributors. Our goal is to leverage our unique, transformational technology to enable power generation for a wide variety of applications within these markets.

The military market has a unique set of requirements we believe are well suited to our products. When integrated with fabric to form re-deployable arrays, our highly efficient, rugged, lightweight modules may allow soldiers to minimize battery loads, reduce the use of conventional fuels, and increase safety through the streamlining of fuel transport operations. We are also working to expand our foldable line of outdoor solar chargers which are well suited for individual soldier or for the bigger power needs of a platoon with the ability of several chargers to be strung together. Our modules can also provide a reliable source of renewable power in remote areas, regardless of local infrastructure. We will continue to reach the military market primarily through partnerships with top systems providers.

Transportation integrated PV, or integration of our flexible solar modules with vehicles such as commercial trucks,

buses, trains and passenger cars, is another market segment that represents a significant opportunity. Due to their flexible form and durable, lightweight properties, our modules can be fitted to the exterior of various vehicles to provide supplemental power without significantly affecting the aerodynamics, weight or aesthetics of the vehicle. We are currently working with multiple integrators and OEMs to develop effective value added solutions for this market. In addition, an opportunity may exist for the integration of space, near space, and aeronautic applications with flexible solar modules. Customers in this market have historically required a high level of durability and conversion efficiency from solar module suppliers, and we believe our products are well suited to compete in this premium market. We expect opportunities in this segment to develop gradually due to customers' extensive development, testing and evaluation processes.

Table of Contents

We continue to supply our strategic partners with PV modules to support their development, testing and certification of new integrated PV products, including product testing by several branches of the U.S. military. We believe that our high power density, high quality flexible solar modules enable new applications for solar power. By creating mutually beneficial partnerships and strategically penetrating the markets discussed above, we plan to transform the landscape of solar power generation with truly innovative end products.

Competition

We have shifted our strategic focus away from large scale utility projects of the traditional solar markets. We believe our thin film, monolithically integrated CIGS technology enables us to deliver sleek, lightweight, rugged, high performance solutions to serve these markets as competitors from other thin film and c-Si companies emerge. The landscape of thin film manufacturers encompasses a broad mix of technology platforms at various stages of development, and consists of a number of medium and small companies. From 2011 to 2013, the landscape changed significantly amid PV industry consolidation and rationalization. Companies currently developing or selling CIGS-based PV modules include Avancis GmbH & Co. KG, Flisom AG, Nuvosun, Inc., Solibro GmbH, Solarion AG and Solar Frontier. A number of manufacturers that traditionally have manufactured and sold c-Si-based modules have entered, or in the future may enter, the market for thin film PV modules, and potentially, CIGS-based PV modules. These efforts have been initiated both through internal development and through acquisition of companies, or the purchase of turnkey solutions offered by PV equipment providers.

The market for traditional, grid connected PV products is dominated by large manufacturers of c-Si technology, although thin film technology on glass has begun to emerge among the major players. We anticipate that while these large manufacturers may continue to dominate the market with their silicon based products, thin film manufacturers will likely capture an increasingly larger share of the market, as is evident from the success of First Solar (CdTe) and Solar Frontier (CIGS), both among the top 20 producers worldwide. In 2012, the five largest PV manufacturers included: Yingli Green Energy Holding Co. Ltd. (China), First Solar (US), Suntech Power Holdings Co., Ltd. (China), Trina Solar (China) and Canadian Solar (Canada). In 2012, crystalline silicon PV technology represented approximately 90% of global market share, a slight increase over 2011 at 88%, with the balance captured by thin film.

We believe our modules offer unique advantages. Their flexible form factor and high power density enable use on weight constrained or architecturally complex rooftops that may be unsuitable for glass based modules. Innovative product design and customer focused development both yield modules that could be integrated into virtually any product to create a source of renewable energy. Whether compared to glass based or other flexible modules, our products offer competitive advantages making them unique in comparison to competing products.

We define the consumer and portable power space as comprising solar powered solutions in the sub-watt range (i.e. smartphone solar chargers) all the way up to the several hundred watts of power range (i.e., outdoor solar chargers for camping, military or outdoor work). Competitors in the consumer products space include companies that design and distribute solar charging solutions but outsource manufacturing. These include Goal Zero, Voltaic, A-Solar, Solio, PowerTraveller, Solar Components and RDK Products. Mono or polycrystalline silicon solar technologies are common in these products. Other competitors in this segment include thin-film solar manufacturers who provide a complete product under their company name or brand. These companies include Global Solar Energy (Sunlinq brand), PowerFilm, Trony and more recently Alta Devices. Competitors in the phone case with supplemental charging include Mophie, Tylt, MyCharge and Powerskin. Competitors in the power bank market include Mophie, Energizer, MyCharge and Tenergy. We believe our differentiated technology lends itself to delivering competitive solutions in this emerging market for personal and portable solar and non-solar charging solutions. The overall market for such products is large and growing rapidly. Pike Research estimates the portable power market will reach $30.5B in worldwide sales by 2015. Digitimes estimates smartphone sales reached 865 million units in 2013.

In addition to the markets mentioned above, an opportunity may exist for the integration of space, near space, and aeronautic vehicles with flexible solar modules. Customers in this market have historically required a high level of durability, conversion efficiency, and light weight from solar module suppliers, and we believe our products are well suited to compete in this premium market. We expect opportunities in this segment to develop gradually over time considering the extensive development, testing and evaluation processes required by customers.

Research and Development and Intellectual Property

We intend to continue to invest in research and development in order to provide near term improvements to our manufacturing process and products, as well as to identify next generation technologies relevant to both our existing and potential new markets. During 2013, 2012 and 2011 we incurred approximately $21.3 million, $20.7 million and $24.1 million, respectively, in research

Table of Contents

and development costs, which includes research and development incurred in relation to our government contracts, as well as manufacturing costs incurred while developing our product lines and manufacturing process.

Our technology was initially developed at ITN beginning in 1994. In early 2006, ITN assigned to us certain CIGS PV-specific technologies, and granted to us a perpetual, exclusive, royalty free, worldwide license to use these technologies in connection with the manufacture, development, marketing and commercialization of CIGS PV to produce solar power. In addition, certain of ITN's existing and future proprietary process and control technologies, although nonspecific to CIGS PV, were assigned to us. ITN retained the right to conduct research and development activities in connection with PV materials, and we agreed to grant a license back to ITN for improvements to the licensed technologies and intellectual property outside of the CIGS PV field.

We protect our intellectual property through a combination of trade secrets and patent protections. We own the following patents and published patent applications:

1. "Apparatus and Method of Production of Thin-Film Photovoltaic Modules" (US Patent No. 7,271,333) (issued September 18, 2007)
2. "Flexible Photovoltaic Array With Integrated Wiring And Control Circuitry, And Associated Methods" (US Patent No. 7,812,247) (issued October 12, 2010) (co-owned with PermaCity Corporation)
3. "Machine and Process for Sequential Multi-Sublayer Deposition of Copper Indium Gallium Diselenide Compound Semiconductors" (US Patent No. 8,021,905) (issued September 20, 2011)
4. "Systems and Processes for Bifacial Collection and Tandem Junctions Using a Thin film Photovoltaic Device" (US 8,124,870) (issued February 28, 2012)
5. "Reinforcing Structures for Thin film Photovoltaic Device Substrates, and Associated Methods" (US 8,207,442) (issued June 26, 2012)
6. "Apparatus and Method for Hybrid Photovoltaic Device Having Multiple, Stacked, Heterogeneous, Semiconductor Junctions" (US 8,426,725) (issued April 23, 2013)
7. "Machine and Process for Sequential Multi-Sublayer Deposition of Copper Indium Gallium Diselenide Compound Semiconductors" (US 8,465,589) (issued June 18, 2013)
8. "Mobile Electronic Device Case" (CN ZL201,330,040,305.1) (issued January 1, 2014)
9. "Mobile Electronic Device Case" (US D697,502 (issued January 14, 2014)
10. "Array of Monolithically Integrated ThinFilm Photovoltaic Cells and Associated Methods" (US 12/143,713) (filed June 20, 2008, Notice of Allowance issued December 20, 2013)
11. "Machine and Process for Continuous, Sequential, Deposition of Semiconductor Solar Absorbers Having Variable Semiconductor Composition Deposited in Multiple Sublayers" (US 12/899,446) (filed October 6, 2010, Notice of Allowance issued October 8, 2013)
12. "Flexible Photovoltaic Array with Integrated Wiring and Control Circuitry, and Associated Methods" (12/901,963) (filed October 11, 2010) (co-owned with PermaCity Corporation)
13. "Cd-Free, Oxide Buffer Layers for Thin Film CIGS Solar Cells By Chemical Solution Deposition Methods" (US 13/227,935) (filed September 8, 2011)
14. "Systems and Processes for Bifacial Collection and Tandem Junctions Using a Thin film Photovoltaic Device" (US 13/406,376) (filed February 27, 2012)
15. "Multilayer Thin Film Back Contact System for Flexible Photovoltaic Devices on Polymer Substrates" (US 13/572,387) (filed August 10, 2012)
16. "Multilayer Thin Film Back Contact System for Flexible Photovoltaic Devices on Polymer Substrates" (PCT/US2012/050398) (filed August 10, 2012)
17. "Apparatus and Method for Hybrid Photovoltaic Device Having Multiple, Stacked, Heterogeneous, Semiconductor Junctions" (US 13/770,693) (filed February 19, 2013)

Table of Contents

18. "Apparatus and Method for Hybrid Photovoltaic Device Having Multiple, Stacked, Heterogeneous, Semiconductor Junctions" (EP 11804861.0) (filed December 13, 2011)
19. "Subtractive Hinge and Associated Methods (US 13/783,336) (filed March 3, 2013)
20. "Subtractive Hinge and Associated Methods (PCT/US 2013/28,929) (filed March 4, 2013)

In addition, we have nineteen (19) unpublished pending patent applications in related areas, fourteen (14) of which were filed in 2013.

In order to protect our branding of the EnerPlex™ mark and design, as well as various slogans and product family names, we have filed for and been awarded the following trademark registrations (in the countries designated):

1. EnerPlex™ (mark and design with grid detail) - (U.S. 4.401.807, Australia 1.527.553, EU 11.355.369, Hong Kong 302.442.717, Japan 5.600.832)
2. EnerPlex™ (mark and design without grid detail) - (U.S. 4.441.523, Australia 1.559.524, EU 11.853.876, Japan 5.610.319)
3. "Transforming Everyday Life™" - (U.S. 4.401.811, Australia 15.398.784, EU 11.557.394, Japan 5606585, Mexico 1.383.539)
4. Surfr® - (US 4,441,391, Australia 1,554,971, EU 11,853,471, Hong Kong 302,622,825, Japan 5,623,478)
5. EnerPlex Kickr® - (US 4,433,827, Australia 1,554971, EU 11,801,206, Hong Kong 302,603,150)
6. EnerPlex Jumpr® - (US 4,441,347, Australia 1,554,970, EU 11,790,177, Hong Kong 302,595,952)
7. Wavesol® - (US 3,971,627)

In addition, we have U.S. trademark applications that have been filed:

1. EnerPlex Packr™ (85/973,369)
2. "Always In Charge™ (86/046,247)
3. "Life is Limitless"™ (85,803,789)

Suppliers

We rely on several unaffiliated companies to supply certain raw materials used during the fabrication of our PV modules and PV integrated electronics. We acquire these materials on a purchase order basis and do not have long term purchase quantity commitments with the suppliers, although we may enter into such contracts in the future. We currently acquire all of our high temperature plastic from one supplier, although alternative suppliers of similar materials exist. We purchase component molybdenum, copper, indium, gallium, selenium and indium tin oxides from a variety of suppliers. We also currently are in the process of identifying and negotiating arrangements with alternative suppliers of materials in the United States and Asia.

The manufacturing equipment and tools used in our production process have been purchased from various suppliers in Europe, the United States and Asia. Although we have had good relations with our existing equipment and tools suppliers, we monitor and explore opportunities for developing alternative sources to drive our manufacturing costs down.

Our consumer products are delivered to us as finished goods from a variety of contract manufacturers in Asia. For those products that include PV modules we provide the modules to the contract manufacturers who then return the modules integrated into the finished product.

Employees

As of December 31, 2013, we had 114 full time employees.

Company History

We were formed in October 2005 from the separation by ITN of its Advanced Photovoltaic Division and all of that division's key personnel and core technologies. ITN, a private company incorporated in 1994, is an incubator dedicated to the development of thin film, PV, battery, fuel cell and nano technologies. Through its work on research and development contracts for private and government entities, ITN developed proprietary processing and manufacturing know-how applicable to PV products generally,

Table of Contents

and to CIGS PV products in particular. Our company was established by ITN to commercialize its investment in CIGS PV technologies. In January 2006, ITN assigned to us all its CIGS PV technologies and trade secrets and granted to us a perpetual, exclusive, royalty free worldwide license to use certain of ITN's proprietary process, control and design technologies in the production of CIGS PV modules. Upon receipt of the necessary government approvals in January 2007, ITN assigned government funded research and development contracts to us and also transferred the key personnel working on the contracts to us.

Corporate Information

We were incorporated under the laws of Delaware in October 2005. Our principal business office is located at 12300 Grant Street, Thornton, Colorado 80241, and our telephone number is (720) 872-5000. Our e-commerce website address is www.goenerplex.com. Our website address is www.ascentsolar.com. Information contained on our website or any other website does not constitute, and should not be considered, part of this Annual Report.

Available Information

We file with the Securities and Exchange Commission ("SEC") our annual report on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K and all amendments to those reports, proxy statements and registration statements. You may read and copy any material we file with the SEC at the SEC's Public Reference Room at 100 F Street, NE, Washington, D.C. 20549. You may also obtain information on the operation of the Public Reference Room by calling the SEC at 1-800-SEC-0330. In addition, the SEC maintains an internet site at http://www.sec.gov that contains reports, proxy and information statements, and other information regarding issuers, including us, that file electronically. We make available free of charge on, or through, our website at www.ascentsolar.com our annual reports on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K and amendments to these reports filed or furnished pursuant to Section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended ("Exchange Act") as soon as reasonably practicable after we file these materials with the SEC.

Item 1A. Risk Factors

The risks included here are not exhaustive or exclusive. Other sections of this Annual Report may include additional factors which could adversely affect our business, results of operations and financial performance. We operate in a very competitive and rapidly changing environment. New risk factors emerge from time to time, and it is not possible for management to predict all such risk factors, nor can it assess the impact of all such risk factors on our business or the extent to which any factor, or combination of factors, may cause actual results to differ materially from those contained in any forward-looking statements. Given these risks and uncertainties, investors should not place undue reliance on forward-looking statements as a prediction of actual results.

Risks Relating to Our Business

We have a limited history of operations, have not generated significant revenue from operations and have had limited production of our products.

We have a limited operating history and have generated limited revenue from operations. Currently we are producing consumer oriented products in quantities necessary to meet current demand. Under our current business plan, we expect losses to continue until annual revenues and gross margins reach a high enough level to cover operating expenses. We plan to continue manufacturing at our current facilities and to expand our production capacity as part of our Joint Venture with Suqian. We are utilizing contract manufacturers in Asia for components and for final assembly of finished goods. Our ability to achieve our business, commercialization and expansion objectives will depend on a number of factors, including whether:

- we can generate customer acceptance of and demand for our products;
- we successfully ramp up commercial production on the equipment installed;
- our products are successfully and timely certified for use in our target markets;
- we successfully operate production tools to achieve the efficiencies, throughput and yield necessary to reach our cost targets;
- the products we design are saleable at a price sufficient to generate profits;
- our strategic alliance with TFG Radiant Investment Group Ltd. ("TFG Radiant") results in the design, manufacture and sale of sufficient products to achieve profitability;
-

our ability to complete the formation of our Suqian JV and subsequent installation of manufacturing equipment and ramp to production;

- we raise sufficient capital to enable us to reach a level of sales sufficient to achieve profitability on terms favorable to us;

Table of Contents

- we are able to design, manufacture, market, distribute and sell our newly introduced line of consumer oriented products;
- we effectively manage the planned ramp up of our operations;
- we successfully develop and maintain strategic relationships with key partners, including OEMs, system integrators and distributors, retailers and e-commerce companies, who deal directly with end users in our target markets;
- our ability to maintain the listing of our common stock on the NASDAQ Global Market or Capital Market;
- our ability to achieve projected operational performance and cost metrics;
- our ability to enter into commercially viable licensing, joint venture, or other commercial arrangements; and
- availability of raw materials.

Each of these factors is critical to our success, and accomplishing each of these tasks may take longer or cost more than expected, or may never be accomplished. It also is likely that problems we cannot now anticipate will arise. If we cannot overcome these problems, our business, results of operations and financial condition could be materially and adversely affected.

We have to date incurred net losses and may be unable to generate sufficient sales in the future to become profitable.

We incurred a net loss applicable to common stockholders of $36.1 million for the year ended December 31, 2013 and reported an accumulated deficit of $247.8 million as of December 31, 2013. We expect to incur net losses in the near term. Our ability to achieve profitability depends on a number of factors, including market acceptance of our consumer oriented products at competitive prices. If we are unable to raise additional capital and generate sufficient revenue to achieve profitability and positive cash flows, we may be unable to satisfy our commitments and may have to discontinue operations.

Our EnerPlex line of consumer oriented products exposes us to many new risks and uncertainties.

Following the appointment of our new President and CEO in February 2012, we repositioned our business model with an immediate focus into developing downstream consumer products. In 2012 we launched our EnerPlex brand line of consumer products, and introduced the first product under the EnerPlex brand with a solar assisted mobile phone charger incorporating our CIGS PV thin film technology. This new line of consumer oriented products exposes us to many risks and uncertainties that are new to our business.

We have limited experience in the design, manufacture, marketing, distribution and sale of consumer oriented products. Our ability to be successful with our line of consumer oriented products will depend on a number of factors, including whether:

- we can achieve and maintain customer acceptance of our new consumer oriented products;
- we can rapidly develop and successfully introduce large numbers of new consumer oriented products in response to changing consumer preferences, the introduction of new consumer electronics products (such as new mobile phone models) that our EnerPlex™ products are designed to extend their battery life, and the introduction of new products by competing manufacturers;
- we can maintain an adequate level of product quality over multiple consumer oriented products which must be designed, manufactured and introduced rapidly to keep pace with changing consumer preferences and competitive factors;
- we can successfully manage our third party contract manufacturers located outside the U.S. on whom we are heavily dependent for the production of our consumer oriented products;
- we can successfully distribute our consumer oriented products through distributors, wholesalers, internet retailers and traditional retailers (many of whom distribute products from competing manufacturers) on whom we are heavily dependent; and
- we can successfully manage the substantial inventory and other asset risks associated with the manufacture and sale of consumer electronic products, given the rapid and unpredictable pace of product obsolescence in such consumer markets.

Our business is based on a new technology, and if our PV modules or processes fail to achieve the performance and cost metrics that we expect, then we may be unable to develop demand for our PV modules and generate sufficient revenue to support our operations.

Our CIGS on flexible plastic substrate technology is a relatively new technology. Our business plan and strategies assume that we will be able to achieve certain milestones and metrics in terms of throughput, uniformity of cell efficiencies, yield, encapsulation,

Table of Contents

packaging, cost and other production parameters. We cannot assure you that our technology will prove to be commercially viable in accordance with our plan and strategies. Further, we or our strategic partners and licensees may experience operational problems with such technology after its commercial introduction that could delay or defeat the ability of such technology to generate revenue or operating profits. If we are unable to achieve our targets on time and within our planned budget, then we may not be able to develop adequate demand for our PV modules, and our business, results of operations and financial condition could be materially and adversely affected.

Our failure to further refine our technology and develop and introduce improved PV products could render our PV modules uncompetitive or obsolete and reduce our net sales and market share.

Our success requires us to invest significant financial resources in research and development to keep pace with technological advances in the solar energy industry. However, research and development activities are inherently uncertain, and we could encounter practical difficulties in commercializing our research results. Our expenditures on research and development may not be sufficient to produce the desired technological advances, or they may not produce corresponding benefits. Our PV modules may be rendered obsolete by the technological advances of our competitors, which could harm our results of operations and adversely impact our net sales and market share.

Failure to expand our manufacturing capability successfully at our facilities, through our strategic alliances, or our Suqian joint venture, would adversely impact our ability to sell our products into our target markets and would materially and adversely affect our business, results of operations and financial condition.

Our growth plan calls for production and operation at our facility, our new joint venture with Suqian and at contract manufacturers in Asia. Successful operations will require substantial engineering and manufacturing resources and is subject to significant risks, including risks of cost overruns, delays and other risks, such as geopolitical unrest that may cause us not be able to successfully operate in other countries. Furthermore, we may never be able to operate our production processes in high volume or at the volumes projected, make planned process and equipment improvements, attain projected manufacturing yields or desired annual capacity, obtain timely delivery of components, or hire and train the additional employees and management needed to scale our operations. Failure to meet these objectives on time and within our planned budget could materially and adversely affect our business, results of operations and financial condition.

We may be unable to manage the expansion of our operations and strategic alliances effectively.

We will need to significantly expand our operations and form beneficial strategic alliances in order to reduce manufacturing costs through economies of scale and partnerships, secure contracts of commercially material amounts with reputable customers and capture a meaningful share of our target markets. To manage the expansion of our operations and alliances, we will be required to improve our operational and financial systems, oversight, procedures and controls and expand, train and manage our growing employee base. Our management team will also be required to maintain and cultivate our relationships with partners, customers, suppliers and other third parties and attract new partners, customers and suppliers. In addition, our current and planned operations, personnel, facility size and configuration, systems and internal procedures and controls, even when augmented through strategic alliances, might be inadequate or insufficient to support our future growth. If we cannot manage our growth effectively, we may be unable to take advantage of market opportunities, execute our business strategies or respond to competitive pressures, resulting in a material and adverse effect to our business, results of operations and financial condition.

We depend on a limited number of third party suppliers for key raw materials, and their failure to perform could cause manufacturing delays and impair our ability to deliver PV modules to customers in the required quality and quantity and at a price that is profitable to us.

Our failure to obtain raw materials and components that meet our quality, quantity and cost requirements in a timely manner could interrupt or impair our ability to manufacture our products or increase our manufacturing cost. Most of our key raw materials are either sole sourced or sourced by a limited number of third party suppliers. As a result, the failure of any of our suppliers to perform could disrupt our supply chain and impair our operations. Many of our suppliers are small companies that may be unable to supply our increasing demand for raw materials as we implement our planned expansion. We may be unable to identify new suppliers in a timely manner or on commercially reasonable terms. Raw materials from new suppliers may also be less suited for our technology and yield PV modules with lower conversion efficiencies, higher failure rates and higher rates of degradation than PV modules manufactured

with the raw materials from our current suppliers.

Our continuing operations will require additional capital which we may not be able to obtain on favorable terms, if at all or without dilution to our stockholders.

The Company will need to raise additional capital to continue the current level of operations through 2014 and into 2015. The Company has begun to explore opportunities to secure additional financing through strategic or financial investors, but there is

Table of Contents

no assurance the Company will be able to raise additional capital on acceptable terms or at all. If we raise additional funds through the issuance of equity or convertible debt securities, the percentage ownership of our existing stockholders could be significantly diluted, and these newly issued securities may have rights, preferences or privileges senior to those of existing stockholders. If we raise additional funds through debt financing, which may involve restrictive covenants, our ability to operate our business may be restricted. We cannot assure you that additional financing will be available on terms favorable to us, or at all. If adequate funds are not available or are not available on acceptable terms, if and when needed, our ability to fund our operations, take advantage of unanticipated opportunities, develop or enhance our products, expand capacity or otherwise respond to competitive pressures could be significantly limited, and our business, results of operations and financial condition could be materially and adversely affected. If our revenues do not increase rapidly, and/or additional financing is not obtained, we will be required to significantly curtail operations to reduce costs and/or sell assets. Such actions would likely have an adverse impact on our future operations.

In addition, the terms of a loan we obtained from the Colorado Housing and Finance Authority ("CHFA") in connection with our purchase and improvement of our Thornton, Colorado facility contain covenants that limit our ability, without the consent of CHFA, to create or incur additional indebtedness (other than obligations created or incurred in the ordinary course of business such as working capital financing); merge or consolidate with any other entity; or make loans or advances to our officers, shareholders, directors or employees. The presence of these covenants gives CHFA the ability to bar us from engaging in certain transactions in the future that we may determine are necessary or advisable to meet our business objectives, including debt offerings and acquisitions of or by other companies. If CHFA were to withhold its written consent under these or other circumstances, we could be forced to prepay such loans at a premium, which could adversely affect our business, results of operations and financial condition.

Our products may never gain sufficient market acceptance, in which case we would be unable to sell our products or achieve profitability.

Demand for our products may never develop sufficiently, and our products may never gain market acceptance, if we fail to produce products that compare favorably against competing products on the basis of cost, quality, weight, efficiency and performance. Demand for our products also will depend on our ability to develop and maintain successful relationships with key partners, including distributors, retailers, OEMs, system integrators and value added resellers. If our products fail to gain market acceptance as quickly as we envision or at all, our business, results of operations and financial condition could be materially and adversely affected.

We are targeting emerging markets for a significant portion of our planned product sales. These markets are new and may not develop as rapidly as we expect, or may not develop at all.

Our target markets include consumer electronics, portable power, defense , transportation, space and near space and BIPV/BAPV. Although certain areas of these markets have started to develop, some of them are in their infancy. We believe these markets have significant long term potential, however, some or all of these markets may not develop and emerge as we expect. If the markets do develop as expected, there may be other products that could provide a superior product or a comparable product at lower prices than our products. If these markets do not develop as we expect, or if competitors are better able to capitalize on these markets our revenues and product margins may be negatively affected.

Failure to consummate strategic relationships with key partners in our various target market segments, such as consumer electronics, defense and portable power, transportation, space and near space, and the respective implementations of the right strategic partnerships to enter these various specified markets, could adversely affect our projected sales, growth and revenues.

We intend to sell thin-film PV modules for use in consumer electronics, portable power systems, defense and portable power systems, transportation, space and near space solar panel applications. Our marketing and distribution strategy is to form strategic relationships with distributors. retailers and value added resellers as well as direct to consumer kiosks and e-commerce to provide a foothold in these target markets. If we are unable to successfully establish working relationships with such market participants or if, due to cost, technical or other factors, our products prove unsuitable for use in such applications; our projected revenues and operating results could be adversely affected.

If sufficient demand for our products does not develop or takes longer to develop than we anticipate, we may be unable to grow our business, generate sufficient revenue to attain profitability or continue operations.

The solar energy industry is at a relatively early stage of development, and the extent to which PV modules, including our own, will be widely adopted is uncertain. While pure PV solutions is not our short term primary market, if PV technology proves unsuitable for widespread adoption or if demand for PV modules fails to develop sufficiently, long term we may be unable to grow our business, generate sufficient sales to attain profitability or continue operations. Many factors, of which several are outside of our control, may affect the viability of widespread adoption of PV technology and demand for PV modules.

Table of Contents

We face intense competition from other manufacturers of thin-film PV modules and other companies in the solar energy industry.

The solar energy and renewable energy industries are both highly competitive and continually evolving as participants strive to distinguish themselves within their markets and compete with the larger electric power industry. We believe our main sources of competition are other thin film PV manufacturers and companies developing other solar solutions, such as solar thermal and concentrated PV technologies.

Many of our existing and potential competitors have substantially greater financial, technical, manufacturing and other resources than we do. A competitor's greater size provides them with a competitive advantage because they often can realize economies of scale and purchase certain raw materials at lower prices. Many of our competitors also have greater brand name recognition, established distribution networks and large customer bases. In addition, many of our competitors have well-established relationships with our current and potential partners and distributors and have extensive knowledge of our target markets. As a result of their greater size, these competitors may be able to devote more resources to the research, development, promotion and sale of their products or respond more quickly to evolving industry standards and changes in market conditions than we can. Our failure to adapt to changing market conditions and to compete successfully with existing or future competitors could materially and adversely affect our business, results of operations and financial condition.

Problems with product quality or performance may cause us to incur warranty expenses, damage our market reputation and prevent us from maintaining or increasing our market share.

If our products fail to perform as expected while under warranty, or if we are unable to support the warranties, sales of our products may be adversely affected or our costs may increase, and our business, results of operations and financial condition could be materially and adversely affected.

We may also be subject to warranty or product liability claims against us that are not covered by insurance or are in excess of our available insurance limits. In addition, quality issues can have various other ramifications, including delays in the recognition of revenue, loss of revenue, loss of future sales opportunities, increased costs associated with repairing or replacing products, and a negative impact on our goodwill and reputation. The possibility of future product failures could cause us to incur substantial expenses to repair or replace defective products. Furthermore, widespread product failures may damage our market reputation and reduce our market share causing sales to decline.

The interests of our largest stockholder, TFG Radiant, may conflict with our interests or your interests now or in the future.

As of December 31, 2013, TFG Radiant owned approximately 26% of our common stock. As a result of its large holding of our shares, TFG Radiant may have the ability to prevent any transaction that requires the approval of stockholders regardless of whether other stockholders believe any such transaction is in their own best interests, with the exception of certain agreements TFG Radiant has made pursuant to the Amended and Restated Stockholders Agreement. TFG Radiant also has certain registration rights that could impact shareholders. Additionally, TFG Radiant currently holds two seats on our Board of Directors, which affords TFG Radiant greater control and influence over matters affecting our business.

On February 1, 2012, Mr. Victor Lee was appointed by our Board as our President and Chief Executive Officer. Mr. Lee is the managing director of Tertius Financial Group Pte Ltd, the joint venture partner with Radiant Group in TFG Radiant.

TFG Radiant may from time to time acquire and hold interests in businesses that compete directly or indirectly with us. TFG Radiant also may pursue opportunities (including by acquisition) that may be adverse to, or be in direct or indirect competition with us. Additionally, our potential customers may be competitors of TFG Radiant and our interests in selling to those customers could be divergent from TFG Radiant's competitive interests. So long as TFG Radiant continues to own a significant amount of the outstanding shares of our common stock and Mr. Lee is President and Chief Executive Officer, TFG Radiant may be able to strongly influence or effectively control our decisions.

Currency translation risk may negatively affect our net sales, cost of equipment, cost of sales, gross margin or profitability and could result in exchange losses.

Although our reporting currency is the U.S. dollar, we may conduct business and incur costs in the local currencies of other countries in which we operate, make sales or buy equipment or materials. As a result, we are subject to currency translation risk. Our future contracts and obligations may be exposed to fluctuations in currency exchange rates, and, as a result, our capital expenditures or other costs may exceed what we have budgeted. Further, changes in exchange rates between foreign currencies and the U.S. dollar could affect our net sales and cost of sales and could result in exchange losses. We cannot accurately predict future exchange rates or the overall impact of future exchange rate fluctuations on our business, results of operations and financial condition.

Table of Contents

A significant increase in the price of our raw materials could lead to higher overall costs of production, which would negatively affect our planned product margins, or make our products uncompetitive in the PV market.

Our raw materials include high temperature plastics and various metals. Significant increases in the costs of these raw materials may impact our ability to compete in our target markets at a price sufficient to produce a profit.

Our intellectual property rights or our means of enforcing those rights may be inadequate to protect our business, which may result in the unauthorized use of our products or reduced sales or otherwise reduce our ability to compete.

Our business and competitive position depends upon our ability to protect our intellectual property rights and proprietary technology, including any PV modules that we develop. We attempt to protect our intellectual property rights, primarily in the United States, through a combination of patent, trade secret and other intellectual property laws, as well as licensing agreements and third party nondisclosure and assignment agreements. Because of the differences in foreign patent and other laws concerning intellectual property rights, our intellectual property rights may not receive the same degree of protection in foreign countries as they would in the United States. Our failure to obtain or maintain adequate protection of our intellectual property rights, for any reason, could have a materially adverse effect on our business, results of operations and financial condition. Further, any patents issued in connection with our efforts to develop new technology for PV modules may not be broad enough to protect all of the potential uses of our technology.

We also rely on unpatented proprietary technology. It is possible others will independently develop the same or similar technology or otherwise obtain access to our unpatented technology. To protect our trade secrets and other proprietary information, we require our employees, consultants and advisors to execute proprietary information and invention assignment agreements when they begin working for us. We cannot assure these agreements will provide meaningful protection of our trade secrets, unauthorized use, misappropriation or disclosure of trade secrets, know how or other proprietary information. Despite our efforts to protect this information, unauthorized parties may attempt to obtain and use information that we regard as proprietary. If we are unable to maintain the proprietary nature of our technologies, we could be materially adversely affected.

In addition, when others control the prosecution, maintenance and enforcement of certain important intellectual property, such as technology licensed to us, the protection and enforcement of the intellectual property rights may be outside of our control. If the entity that controls intellectual property rights that are licensed to us does not adequately protect those rights, our rights may be impaired, which may impact our ability to develop, market and commercialize our products. Further, if we breach the terms of any license agreement pursuant to which a third party licenses us intellectual property rights, our rights under that license may be affected and we may not be able to continue to use the licensed intellectual property rights, which could adversely affect our ability to develop, market and commercialize our products.

If third parties claim we are infringing or misappropriating their intellectual property rights, we could be prohibited from selling our PV products, be required to obtain licenses from third parties or be forced to develop non-infringing alternatives, and we could be subject to substantial monetary damages and injunctive relief.

The PV industry is characterized by the existence of a large number of patents and frequent litigation based on allegations of patent infringement. We are aware of numerous issued patents and pending patent applications owned by third parties that may relate to current and future generations of solar energy. The owners of these patents may assert the manufacture, use or sale of any of our products infringes one or more claims of their patents. Moreover, because patent applications can take many years to issue, there may be currently pending applications, unknown to us, which may later result in issued patents that materially and adversely affect our business. Third parties could also assert claims against us that we have infringed or misappropriated their intellectual property rights. Whether or not such claims are valid, we cannot be certain we have not infringed the intellectual property rights of such third parties. Any infringement or misappropriation claim could result in significant costs or substantial damages to our business or an inability to manufacture, market or sell any of our PV modules found to infringe or misappropriate. Even if we were to prevail in any such action, the litigation could result in substantial cost and diversion of resources that could materially and adversely affect our business. The large number of patents, the rapid rate of new patent issuances, the complexities of the technology involved and uncertainty of litigation increase the risk of business assets and management’s attention being diverted to patent litigation. Even if obtaining a license were feasible, it could be costly

and time consuming. We might be forced to obtain additional licenses from our existing licensors in the event the scope of the intellectual property we have licensed is too narrow to cover our activities, or in the event the licensor did not have sufficient rights to grant us the license(s) purported granted. Also, some of our licenses may restrict or limit our ability to grant sub-licenses and/or assign rights under the licenses to third parties, which may limit our ability to pursue business opportunities.

Our future success depends on retaining our Chief Executive Officer and existing management team and hiring and assimilating new key employees and our inability to attract or retain key personnel would materially harm our business and results of operations.

Table of Contents

Our success depends on the continuing efforts and abilities of our executive officers, including Mr. Victor Lee, our President and Chief Executive Officer, our other executive officers, and key technical personnel. Our future success also will depend on our ability to attract and retain highly skilled employees, including management, technical and sales personnel. The loss of any of our key personnel, the inability to attract, retain or assimilate key personnel in the future, or delays in hiring required personnel could materially harm our business, results of operations and financial condition.

Our PV modules contain limited amounts of cadmium sulfide, and claims of human exposure or future regulations could have a material adverse effect on our business, results of operations and financial condition.

Our PV modules contain limited amounts of cadmium sulfide, which is regulated as a hazardous material due to the adverse health effects that may arise from human exposure, and is banned in certain countries. We cannot assure you human or environmental exposure to cadmium sulfide used in our PV modules will not occur. Any such exposure could result in third party claims against us, damage to our reputation and heightened regulatory scrutiny of our PV modules. Future regulation relating to the use of cadmium in various products could force us to seek regulatory exemptions or impact the manufacture and sale of our PV modules and could require us to incur unforeseen environmental related costs. The occurrence of future events such as these could limit our ability to sell and distribute our PV modules, and could have a material adverse effect on our business, results of operations and financial condition.

Environmental obligations and liabilities could have a substantial negative impact on our financial condition, cash flows and profitability.

We are subject to a variety of federal, state, local and foreign laws and regulations relating to the protection of the environment, including those governing the use, handling, generation, processing, storage, transportation and disposal of, or human exposure to, hazardous and toxic materials (such as the cadmium used in our products), the discharge of pollutants into the air and water, and occupational health and safety. We are also subject to environmental laws which allow regulatory authorities to compel, or seek reimbursement for, cleanup of environmental contamination at sites now or formerly owned or operated by us and at facilities where our waste is or has been disposed. We may incur significant costs and capital expenditures in complying with these laws and regulations. In addition, violations of, or liabilities under, environmental laws or permits may result in restrictions being imposed on our operating activities or in our being subjected to substantial fines, penalties, criminal proceedings, third party property damage or personal injury claims, cleanup costs or other costs. Also, future developments such as more aggressive enforcement policies, the implementation of new, more stringent laws and regulations, or the discovery of presently unknown environmental conditions or noncompliance may require expenditures that could have a material adverse effect on our business, results of operations and financial condition. Further, greenhouse gas emissions have increasingly become the subject of international, national, state and local attention. Although future regulations could potentially lead to an increased use of alternative energy, there can be no guarantee that such future regulations will encourage solar technology. Given our limited history of operations, it is difficult to predict future environmental expenses.

We currently anticipate having substantial international operations that will subject us to a number of risks, including potential unfavorable political, regulatory, labor and tax conditions in foreign countries.

We expect to expand our operations abroad in the future and, as a result, we may be subject to the legal, political, social and regulatory requirements and economic conditions of foreign jurisdictions. Risks inherent to international operations, include, but are not limited to, the following:

- difficulty in procuring supplies and supply contracts abroad;
- difficulty in enforcing agreements in foreign legal systems;
- foreign countries imposing additional withholding taxes or otherwise taxing our foreign income, imposing tariffs or adopting other restrictions on foreign trade and investment, including currency exchange controls;
- inability to obtain, maintain or enforce intellectual property rights;
- risk of nationalization;
- changes in general economic and political conditions in the countries in which we may operate, including changes in the government incentives we might rely on;
-

unexpected adverse changes in foreign laws or regulatory requirements, including those with respect to environmental protection, export duties and quotas;

- difficulty with staffing and managing widespread operations;

Table of Contents

- trade barriers such as export requirements, tariffs, taxes and other restrictions and expenses, which could increase the prices of our products and make us less competitive in some countries; and
- difficulty of, and costs relating, to compliance with the different commercial and legal requirements of the international markets in which we plan to offer and sell our PV products.

Our business in foreign markets will require us to respond to rapid changes in market conditions in these countries. Our overall success as an international business depends, in part, on our ability to succeed in differing legal, regulatory, economic, social and political conditions. If we are not able to develop and implement policies and strategies that are effective in each location where we will do business, then our business, results of operations and financial condition could be materially and adversely affected.

Existing regulations and policies and changes to these regulations and policies may present technical, regulatory and economic barriers to the purchase and use of PV products, which may significantly reduce demand for our PV products.

The market for electricity generation products is heavily influenced by foreign, U.S., state and local government regulations and policies concerning the electric utility industry, as well as policies promulgated by electric utilities. These regulations and policies often relate to electricity pricing and technical interconnection of customer owned electricity generation. In the United States and in a number of other countries, these regulations and policies have been modified in the past and may be modified again in the future. These regulations and policies could deter end user purchases of PV products and investment in the research and development of PV technology. For example, without a mandated regulatory exception for PV systems, utility customers are often charged interconnection or standby fees for putting distributed power generation on the electric utility grid. These fees could increase the cost to our end users of using PV systems and make them less desirable, thereby harming our business, prospects, results of operations and financial condition. In addition, electricity generated by PV systems mostly competes with expensive peak hour electricity, rather than the less expensive average price of electricity. Modifications to the peak hour pricing policies of utilities, such as to a flat rate, would require PV systems to achieve lower prices in order to compete with the price of electricity from other sources.

We anticipate that our PV modules and their use in installations will be subject to oversight and regulation in accordance with national and local ordinances relating to building codes, safety, environmental protection, utility interconnection and metering and related matters. It is difficult to track the requirements of individual states and design equipment to comply with the varying standards. Any new government regulations or utility policies pertaining to PV modules may result in significant additional expenses to us, our business partners and their customers and, as a result, could cause a significant reduction in demand for our PV modules.

Risks Relating to our Securities and an Investment in our Common Stock

As a public company we are subject to complex legal and accounting requirements that require us to incur substantial expenses, and our financial controls and procedures may not be sufficient to ensure timely and reliable reporting of financial information, which, as a public company, could materially harm our stock price and listing on the NASDAQ Global or Capital Market.

As a public company, we are subject to numerous legal and accounting requirements that do not apply to private companies. The cost of compliance with many of these requirements is substantial, not only in absolute terms but, more importantly, in relation to the overall scope of the operations of a small company. Failure to comply with these requirements can have numerous adverse consequences including, but not limited to, our inability to file required periodic reports on a timely basis, loss of market confidence, delisting of our securities and/or governmental or private actions against us. We cannot assure you we will be able to comply with all of these requirements or the cost of such compliance will not prove to be a substantial competitive disadvantage vis-à-vis our privately held and larger public competitors.

The Sarbanes-Oxley Act of 2002 (“Sarbanes-Oxley”) requires, among other things, that we maintain effective internal control over financial reporting and disclosure controls and procedures. In particular, we must perform system and process evaluation and testing of our internal control over financial reporting to allow management to report on the effectiveness of our internal control over financial reporting, as required by Section 404 of Sarbanes-Oxley. Our compliance with Section 404 of Sarbanes-Oxley will require we incur substantial accounting expense and expend

significant management efforts. The effectiveness of our controls and procedures may, in the future, be limited by a variety of factors, including:

- faulty human judgment and simple errors, omissions or mistakes;
- fraudulent action of an individual or collusion of two or more people;
- inappropriate management override of procedures; and

Table of Contents

- the possibility that any enhancements to controls and procedures may still not be adequate to assure timely and accurate financial information.

If we are not able to comply with the requirements of Section 404 in a timely manner, or if we or our independent registered public accounting firm, identifies deficiencies in our internal control over financial reporting that are deemed to be material weaknesses, we may be subject to NASDAQ delisting, investigations by the SEC and civil or criminal sanctions.

Our ability to successfully implement our business plan and comply with Section 404 requires us to be able to prepare timely and accurate financial statements. We expect we will need to continue to improve existing, and implement new operational, financial and accounting systems, procedures and controls to manage our business effectively.

Any delay in the implementation of, or disruption in the transition to, new or enhanced systems, procedures or controls may cause our operations to suffer, and we may be unable to conclude that our internal control over financial reporting is effective as required under Section 404 of Sarbanes-Oxley. If we are unable to complete the required Section 404 assessment as to the adequacy of our internal control over financial reporting, if we fail to maintain or implement adequate controls, our ability to obtain additional financing could be impaired. In addition, investors could lose confidence in the reliability of our internal control over financial reporting and in the accuracy of our periodic reports filed under the Exchange Act. A lack of investor confidence in the reliability and accuracy of our public reporting could cause our stock price to decline.

The price of our common stock may continue to be volatile.

As of December 31, 2013, our common stock traded on the NASDAQ Global Market. The trading price of our common stock from time to time has fluctuated widely and may be subject to similar volatility in the future. For example, in the calendar year ended December 31, 2013, our common stock traded as low as $0.51 and as high as $1.16, and in 2012, traded as low as $0.42 and as high as $1.94. The trading price of our common stock in the future may be affected by a number of factors, including events described in these “Risk Factors.” In recent years, broad stock market indices, in general, and smaller capitalization and PV companies, in particular, have experienced substantial price fluctuations. In a volatile market, we may experience wide fluctuations in the market price of our common stock. These fluctuations may have a negative effect on the market price of our common stock regardless of our operating performance. In the past, following periods of volatility in the market price of a company’s securities, securities class action litigation has often been instituted. A securities class action suit against us could result in substantial costs, potential liabilities and the diversion of management’s attention and resources, and could have a material adverse effect on our financial condition.

Future sales, or the potential for future sales, of our securities may cause the trading price of our common stock to decline and could impair our ability to raise capital.

Sales of a substantial number of shares of our common stock or other securities in the public markets, or the perception these sales may occur, could cause the market price of our common stock or other securities to decline and could materially impair our ability to raise capital through the sale of additional securities. A large number of our outstanding shares are not registered under the Securities Act of 1933, as amended. If and when these shares are registered or become eligible for sale to the public market, the market price of our common stock could decline.

We are not currently in compliance with the minimum bid price rule of the NASDAQ Global Market and a delisting could limit the liquidity of our stock, increase its volatility and hinder our ability to raise capital.

Under the rules of the NASDAQ, listed companies are required to maintain a share bid price of at least $1.00 per share and if the closing share bid price stays below $1.00 for a period of 30 consecutive business days, then the listed company would have a cure period of at least 180 days for the purpose of regaining compliance with the $1.00 per share bid price minimum. As reported in our Current Report on Form 8-K filed on March 21, 2014, we received notice from NASDAQ stating that, due to our continued non-compliance with the minimum $1.00 bid price requirement for continued listing, we were subject to delisting from the NASDAQ Global Market tier, pending a timely request for a hearing or a successful transfer of listing to the NASDAQ Capital Market tier. As reported in our Current Report on Form 8-K on March 27, 2014, we received approval to transfer our listing to the NASDAQ Capital Market tier, effective with opening of the market on March 28, 2014. Our common stock will continue to trade under the symbol “ASTI”. The NASDAQ Capital Market is a continuous trading market that operates in substantially the same manner as

the NASDAQ Global Market.

Our transfer of listing to the NASDAQ Capital Market resulted in an additional 180-day period within which to regain compliance with the $1.00 minimum bid price requirement, through September 15, 2014 (the "Compliance Date"). We intend to continue to monitor the bid price of our common stock. If our common stock does not trade at a level that is likely to regain compliance with the NASDAQ requirements, our Board of Directors may consider other options that may be available to achieve compliance. One option to regain compliance is a reverse stock split, however a reverse stock split could have negative implications. If at any time

Table of Contents

before the Compliance Date, the closing bid price of our common stock is at least $1.00 per share for at least ten consecutive business days, we will regain compliance with the price requirement. If we cannot demonstrate compliance by the Compliance Date or if we do not comply with the terms of the extension granted by NASDAQ, our common stock may then be subject to delisting.

If our common stock is delisted by NASDAQ, our common stock may be eligible for quotation on an over-the-counter quotation system or on the pink sheets. Upon any such delisting, our common stock would become subject to the regulations of the SEC relating to the market for penny stocks. A penny stock is any equity security not traded on a national securities exchange that has a market price of less than $5.00 per share. The regulations applicable to penny stocks may severely affect the market liquidity for our common stock and could limit the ability of shareholders to sell securities in the secondary market. In such a case, an investor may find it more difficult to dispose of or obtain accurate quotations as to the market value of our common stock, and there can be no assurance that our common stock will be eligible for trading or quotation on any alternative exchanges or markets.

Delisting from NASDAQ could adversely affect our ability to raise additional financing through public or private sales of equity securities, would significantly affect the ability of investors to trade our securities and would negatively affect the value and liquidity of our common stock. Delisting could also have other negative results, including the potential loss of confidence by employees, the loss of institutional investor interest and fewer business development opportunities.

If you purchase the securities, you may experience dilution if we issue additional equity securities in future fundraising transactions.

If we issue additional common stock, or securities convertible into or exchangeable or exercisable for common stock, our stockholders, including investors who purchase shares in this offering, will experience dilution, and any such issuances may result in downward pressure on the price of our common stock.

Current stockholders will be diluted by the issuance of shares related our outstanding Series A and Series B preferred stock, including shares that would be issued if we elect to pay dividends and make-whole amounts in the form of common stock.

The conversion of our outstanding Series A and Series B preferred stock purchase would result in the future issuance of significant additional shares of common stock by the Company. In addition, an indeterminate number of additional common shares may be issued in the event the Company elects to pay dividends and make-whole amounts (if any) due on the Series A and Series B preferred stock in the form of shares rather than cash. To the extent we issue common stock in payment of the make-whole amounts (if any) for redemption of the Series A and Series B preferred stock, or elect to pay dividends on the Series A Preferred Stock in the form of our common stock, rather than cash, such issuances will dilute the ownership interests of existing stockholders.

At December 31, 2013, we had issued a total of 4,872,736 common shares (including 996,636 common shares for make-whole amounts paid in common shares in lieu of cash) in connection with the conversion of 387,610 shares of Series A preferred stock. At December 31, 2013, 362,390 shares of Series A preferred stock remained outstanding.

At December 31, 2013, we had issued a total of 2,476,474 common shares (including 1,172,126 common shares for make-whole amounts paid in common shares in lieu of cash) in connection with the conversion of 150 shares of Series B preferred stock. At December 31, 2013, 350 shares of Series B preferred stock remained outstanding.

Some provisions of our charter documents and Delaware law may have anti-takeover effects that could discourage an acquisition of us by others, even if an acquisition would be beneficial to our stockholders, and may prevent attempts by our stockholders to replace or remove our current management.

Provisions in our Certificate of Incorporation and Bylaws, as well as provisions of Delaware law, could make it more difficult for a third party to acquire us, or for a change in the composition of our Board of Directors (our “Board”) or management to occur, even if doing so would benefit our stockholders. These provisions include:

- authorizing the issuance of “blank check” preferred stock, the terms of which may be established and shares of which may be issued without stockholder approval;
- dividing our Board into three classes;
- limiting the removal of directors by the stockholders; and
- limiting the ability of stockholders to call a special meeting of stockholders.

18

Table of Contents

In addition, we are subject to Section 203 of the Delaware General Corporation Law, which generally prohibits a Delaware corporation from engaging in any of a broad range of business combinations with an interested stockholder for a period of three years following the date on which the stockholder became an interested stockholder, unless such transactions are approved by our Board. This provision could have the effect of delaying or preventing a change of control, whether or not it is desired by, or beneficial to, our stockholders.

TFG Radiant, our largest stockholder, is exempt from the general prohibitions of Section 203 because the transaction by which it became an interested stockholder was approved by our Board. Because TFG Radiant has two representatives on our Board, it is less likely that a third party could become an interested stockholder without the consent of TFG Radiant.

Item 1B. Unresolved Staff Comments

None.

Item 2. Properties

We own an approximately 138,000 square foot manufacturing and office facility in Thornton, Colorado.

Item 3. Legal Proceedings

On October 21, 2011, we were notified that a complaint (the “Lawsuit”) was filed by Jefferies & Company, Inc. ("Jefferies") against us in state court located in the County and State of New York.

In December 2010, we and Jefferies entered into an engagement agreement (the “Fee Agreement”) pursuant to which Jefferies was hired to act as our financial advisor in relation to certain potential transactions. In the Lawsuit, Jefferies claims it is entitled to receive an investment banking fee of $3.0 million (plus expense reimbursement of approximately $49,000) under the Fee Agreement in connection with the August 2011 investment and strategic alliance transaction (the “Financing”) between us and TFG Radiant. In addition, should it prevail at trial, Jefferies would be able to claim an award for attorney's fees and prejudgment interest in the approximate amount of $1.2 million.

At the August 12, 2011 closing of the Financing, we received aggregate proceeds of $7.4 million from the sale to TFG Radiant of 6,400,000 shares of our common stock (the “Tranche 1 Shares”) at a price of $1.15 per share. TFG Radiant also received an option to purchase an additional 9,500,000 shares of Ascent stock (the “Tranche 2 Shares”) at a price of $1.55 per share. We have not received any proceeds from the option for the Tranche 2 Shares because such option is not currently exercisable.

To date, we have paid Jefferies the fees we believe are owed under the Fee Agreement, which are a $100,000 retainer and approximately $49,000 of out-of-pocket expenses. The discovery process in the case began in early 2012 and is now complete. Jefferies' motion for summary judgment has been denied. A non-jury trial has been set for April 16, 2014.

In March 2014, the parties engaged in settlement discussions and reached an agreement in principle to settle the Lawsuit. The term sheet for this proposed settlement is being prepared as of the date of this filing.

We record a liability in our financial statements for costs related to claims, including settlements and judgments, where we have assessed that a loss is probable and an amount can be reasonably estimated. We have accrued $1.7 million as of December 31, 2013 based on our assessment of the likelihood of the contingent loss and the range of potential loss.

Item 4. Mine Safety Disclosures

Not applicable.

PART II

Item 5. Market For Registrant’s Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities

Market Information

Our common stock was traded on the NASDAQ Global Market until March 27, 2014. Beginning March 28, 2014, our stock is traded on the NASDAQ Capital Market. Our trading symbol is “ASTI.” The following table sets forth the high and low sales price information per share for our common stock for the last two completed fiscal years.

Price Range of Common Stock

	High	Low
Fiscal 2012		
First Quarter	$1.06	$0.42
Second Quarter	$0.88	$0.53
Third Quarter	$1.94	$0.79
Fourth Quarter	$1.09	$0.62
Fiscal 2013		
First Quarter	$0.74	$0.51
Second Quarter	$0.94	$0.53
Third Quarter	$1.16	$0.73
Fourth Quarter	$1.07	$0.63

Holders

As of December 31, 2013, the number of record holders of our common stock was 28. The vast majority of our publicly traded shares of common stock are held in street name, and we believe the number of beneficial owners of our common stock was approximately 4,000 as of December 31, 2013.

Dividends

The holders of common stock are entitled to receive such dividends as may be declared by our Board of Directors. During the years ended December 31, 2013 and 2012, we did not pay any common stock dividends, and we do not expect to declare or pay any dividends in the foreseeable future. Payment of future dividends will be within the discretion of our Board of Directors and will depend on, among other factors, our retained earnings, capital requirements, and operating and financial condition.

Stock Performance Graph

The following graph compares the cumulative five-year return provided shareholders on Ascent Solar Technologies, Inc. Common Stock relative to the cumulative total returns of the Russell 2000 Index (market index that tracks small cap companies) and the First Trust NASDAQ Clean Edge Green Energy U.S. Index (industry index covering five major sub-sectors; Renewable Electricity Generation, Renewable Fuels, Energy Storage & Conversion, Energy Intelligence and Advanced Energy-Related Materials).

Table of Contents

	12/31/2008	12/31/2009	12/31/2010	12/31/2011	12/31/2012	12/31/2013
Ascent Solar	$100.00	$140.96	$89.36	$10.37	$16.49	$18.88
Russell 2000	$100.00	$125.22	$156.90	$148.24	$170.06	$232.98
NASDAQ Clean Edge Green Energy*	$100.00	$142.34	$145.44	$84.94	$82.29	$158.72

Assumptions:

- The graph covers the period from December 31, 2008 through December 31, 2013, the last trading day of our most recently completed fiscal year.
- The graph assumes that $100 was invested in our common stock on December 31, 2008 at the closing price on that date of $3.76 per share, and in the Russell 2000 Index and the NASDAQ Clean Edge Energy Index, and that all dividends, if any, were reinvested. No cash dividends have been declared or paid on our common stock.
- Stockholder returns over the indicated period should not be considered indicative of future stockholder returns.

Item 6. Selected Financial Data

The following tables include selected financial data for each of our last five fiscal years. The statement of operations data for the years ended December 31, 2013, 2012 and 2011 and balance sheet data as of December 31, 2013 and 2012 have been derived from the audited financial statements appearing elsewhere in this report. The statement of operations data for the years ended December 31, 2010 and 2009 and the balance sheet data as of December 31, 2011, 2010 and 2009 have been derived from our audited financial statements appearing in our previous reports filed with the SEC. This data should be read in conjunction with the financial statements and notes therein, with the "Management's Discussion and Analysis of Financial Condition and Results of Operations" in Item 7 of this report and with the other financial data set forth elsewhere in this report. Our historical results of operations are not necessarily indicative of results of operations to be expected for future periods.

Table of Contents

Statements of Operations Data	Year Ended December 31,				
In thousands except per share data	2013	2012	2011	2010	2009
Revenue	$1,316	$1,197	$3,950	$2,481	$1,464
Research, Development and Manufacturing Operations Expense	21,343	20,729	24,122	24,354	15,508
Selling, General and Administrative Expense	7,391	5,008	7,130	7,454	7,694
Impairment Loss	822	3,402	78,000	1,769	—
Loss from Operations	(28,239)	(27,941)	(105,302)	(31,096)	(21,738)
Net Loss	(30,131)	(28,770)	(105,743)	(31,234)	(20,923)
Basic and diluted net loss per share	$(0.66)	$(0.66)	$(3.02)	$(1.14)	$(0.93)

Balance Sheet Data	December 31,				
In thousands	2013	2012	2011	2010	2009
Cash and investments	$3,318	$12,621	$23,915	$44,790	$60,506
Working capital	1,170	12,804	22,333	41,489	50,229
Total Assets	28,539	43,524	61,425	160,021	172,661
Long-Term Obligations	6,115	6,388	6,642	7,279	7,095
Stockholders' Equity	$15,434	$34,227	$50,003	$146,566	$154,315

Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations

The following discussion of our financial condition and results of operations should be read in conjunction with our audited financial statements and the notes to those financial statements appearing elsewhere in this Form 10-K. This discussion and analysis contains statements of a forward-looking nature relating to future events or our future financial performance. As a result of many factors, our actual results may differ materially from those anticipated in these forward-looking statements. These statements involve known and unknown risks, uncertainties and other factors that may cause our actual results, levels of activity, performance or achievements to be materially different from any future results, levels of activity, performance or achievements expressed or implied by these forward-looking statements.

Overview

We are a development stage company formed to commercialize flexible PV modules using our proprietary technology. For the year ended December 31, 2013, we generated $1.3 million of revenue. Our revenue from product sales was $1.1 million and revenue from government research and development contracts was $0.2 million. As of December 31, 2013, we had an accumulated deficit of $247.8 million.

In 2012, we accelerated our transition to a business model focusing on developing PV integrated consumer electronics. In June of 2012, we launched our new line of consumer products under the EnerPlex™ brand, and introduced our first product, the Surfr™, a battery and a solar case for the Apple® iPhone® 4/4S smart phone featuring our ultra-light CIGS thin film technology integrated directly into the case. The case incorporates our ultra-light and thin PV module into a sleek, protective iPhone 4/4S case, along with a thin, life extending, battery. The charger adds minimal weight and size to an iPhone, yet provides supplemental charging when needed. In August of 2012, we announced the launch of the second version of Surfr for the Samsung® Galaxy S® III, which provides 85% additional battery life.

In December 2012, we launched the EnerPlex Kickr™ and EnerPlex Jumpr™ product series. The Kickr IV is an extremely portable, compact and durable solar charging device, approximately seven inches by seven inches when folded, and weighs less than half a pound. The Kickr IV provides 6.5 watts of regulated power that can help charge phones, digital cameras, and other small USB enabled devices. The Kickr IV is ideal for outdoor activities such as camping, hiking and mountain climbing as well as daily city use. To complement the Kickr IV, we also released the Jumpr™ series of portable power banks. The Jumpr™ series provides a compact power storage solution for those who need to take the power of the sun with them on the go.

During 2013, the EnerPlex™ brand rapidly expanded adding two additional product series as well as over fifteen new products. In the beginning of 2013, we introduced new additions to the Jumpr™ line of portable power banks; releasing the Jumpr Mini in August, Jumpr Stack in August and Jumpr Max in September. The latest additions to the Kickr™ line of portable solar chargers, the Kickr I and Kickr II were introduced in August at the Outdoor Retailer show. Furthermore, in October 2013 we released our first series of solar integrated backpacks for consumer use, the Packr™, a fashion forward and functional pack perfect

Table of Contents

for charging mobile electronic devices while on the go. Also in October of 2013, we introduced the Surfr™ battery and solar case for the Samsung Galaxy S® 4 and in December we introduced the Surfr™ battery and solar case for Apple's iPhone® 5. In addition to releasing products in our flagship product lines, we added an assortment of useful accessories, all of which can be integrated into the EnerPlex™ ecosystem of products; such as the LED wand which can be easily plugged into a Jumpr™ power bank to provide hours of light, or the Travel Adaptor, which enables consumers to charge up their Jumpr™ power banks from a traditional outlet anywhere in the world.

Throughout 2013, we aggressively pursued new distribution channels for the EnerPlex™ brand; these activities have led to placement in a variety of high-traffic ecommerce venues such as www. walmart.com, www.brookstone.com, www.newegg.com as well as many others including our own e-commerce platform at www.goenerplex.com. The April 2013 placement of EnerPlex products at Fry's Electronics, a US West Coast consumer electronics retailer, represented our first domestic retail presence. EnerPlex products are carried in all of Fry's 34 stores across 9 states. Each store is provided with EnerPlex branded merchandising assets to highlight the uniqueness of our product lines. We began our direct sales to consumers through kiosks in 2013, and currently have 9 kiosks in 3 states (Colorado, California, Nevada) with plans for expansion throughout 2014.

We continue to design and manufacture PV integrated consumer electronics, as well as portable power applications for commercial and military users. Due to the high durability of the monolithic integration employed by our technology, the capability to customize modules into different form factors and the industry leading light weight and flexibility provided by our modules, we believe the potential applications for our products are numerous.

Commercialization and Manufacturing Strategy

Our proprietary manufacturing process deposits multiple layers of materials, including a thin film of highly efficient Copper-Indium-Gallium-diSelenide ("CIGS") semiconductor material, on a flexible, lightweight, plastic substrate using a roll-to-roll manufacturing process and then laser patterns the layers to create interconnected PV cells, or PV modules, in a process known as monolithic integration. Our monolithic integration techniques enable us to form complete PV modules with less or no costly back end assembly of intercell connections. Traditional PV manufacturers assemble PV modules by bonding or soldering discrete PV cells together. This manufacturing step typically increases manufacturing costs and at times proves detrimental to the overall yield and reliability of the finished product. By reducing or eliminating this added step using our proprietary monolithic integration techniques, we believe we can achieve cost savings in, and increase the reliability of, our PV modules. We believe our technology and manufacturing process, which results in a lighter, flexible module package, provides us with unique market opportunities relative to both the crystalline silicon ("c-Si") based PV manufacturers that currently lead the PV market, as well as other thin-film PV manufacturers that use substrate materials such as glass, stainless steel or other metals that can be heavier and more rigid than plastics.

Currently, we are producing consumer oriented products focusing on charging devices powered by or enhanced by our solar modules. Products in these markets are priced based on the overall value proposition rather than a commodity-style price per watt basis. We continue to develop new consumer products and we have adjusted our utilization of our equipment to meet our near term forecast sales. We plan to continue the development of our current PV technology to increase module efficiency, improve our manufacturing tooling and process capabilities and reduce manufacturing costs. We also plan to continue to take advantage of research and development contracts to fund a portion of this development.

On December 28, 2013, we entered into a definitive agreement for the establishment of a joint venture with the Government of the Municipal City of Suqian in Jiangsu Province, China ("Suqian").

The agreement covers a multi-faceted, three-phase project. Completion of all three phases would involve an anticipated investment of up to $500 million over 6 years, comprised of equipment, intellectual property and cash funded by Suqian, our business, and other supporting investors brought into the project by us.

In the initial phase of the project during the first half of 2014, we and Suqian will form a joint venture entity ("JV") in which Suqian will inject approximately $4.8 million in cash and have a majority interest of 75%. We shall inject approximately $1.6 million in cash and hold a minority interest of 25%. Later in 2014, Suqian will further inject the balance of the committed $32.5 million while we will contribute our proprietary technology and intellectual property, as well as certain equipment from our Colorado facility, thereby increasing our shareholdings progressively up to an

80% ownership.

The JV will build a factory to manufacture our proprietary photovoltaic modules. We are committed to purchase this factory within the first 5 years, at the initial construction cost, and we will also purchase Suqian's ownership interest in the JV at a cost of 1.5 times Suqian's cash investment.

Table of Contents

The implementation of the agreement, including the formation of the JV entity, will be subject to a number of contractual conditions and governmental approvals. Such conditions and approvals must be obtained in the future in order for the Suqian factory to be built and become operational.

Related Party Activity

In February 2012, we announced the appointment of Victor Lee as President and Chief Executive Officer. Mr. Lee had served on our Board of Directors since November 2011 and is currently the managing director of Tertius Financial Group Pte Ltd, the joint venture partner with Radiant Group, in TFG Radiant. In April 2012, we appointed the Chairman of TFG Radiant, Mr. Winston Xu (aka Xu Biao), as a member of our Board of Directors. TFG Radiant owns approximately 26% of our outstanding common stock as of December 31, 2013.

The addition of TFG Radiant as a major shareholder has significantly improved our capabilities on a number of fronts. TFG Radiant's domicile in China provides us access to high quality, low cost contract manufacturing in Asia through expansion of TFG Radiant's existing relationships, developed through many years of successful operation in China. Integrating these suppliers into our supply chain enables us to bring our products to market faster. TFG Radiant also provides a global product perspective that significantly improves the product design activities of our Thornton, Colorado designers as they collaborate with designers in Asia. We continue to integrate and improve the design-to-manufacture process where we manufacture modules in our US plant, ship them to Asia for completion into finished goods at low cost and then ship products to all markets we will serve.

In June 2012, we entered into a supply agreement and a contract manufacturing agreement with TFG Radiant. Under the terms of the contract manufacturing agreement TFG Radiant will oversee certain aspects of the contract manufacturing process related to our EnerPlex™ line of consumer products. We will compensate TFG Radiant for acting as general contractor in the contract manufacturing process. Under the supply agreement TFG Radiant intends to distribute our consumer products in Asia. In December 2012, we entered into a consulting agreement with TGF Radiant for product design, product development and manufacturing coordination activities provided by TFG Radiant to us in connection with our line of consumer electronics products. The services agreement has a one year term initially, and the services agreement may be terminated by either party upon 10 days prior written notice.

During the year ended December 31, 2013, we made disbursements to TFG Radiant in the amount of $1,352,000. Included within these disbursements is $800,000 for consulting fees and $552,000 for finished goods received and deposits for work-in-process. During the years ended December 31, 2013 and 2012, we recognized revenue in the amount of $143,000 and $405,000, respectively, for products sold to TFG Radiant under the supply agreement. As of December 31, 2013, we had $21,000 in receivables and deposits with TFG Radiant.

Significant Trends, Uncertainties and Challenges

We believe the significant trends, uncertainties and challenges that directly or indirectly affect our financial performance and results of operations include:

- our ability to generate customer acceptance of and demand for our products;
- successful ramping up of commercial production on the equipment installed;
- our products are successfully and timely certified for use in our target markets;
- successful operating of production tools to achieve the efficiencies, throughput and yield necessary to reach our cost targets;
- the products we design are saleable at a price sufficient to generate profits;
- our strategic alliance with TFG Radiant results in the design, manufacture and sale of sufficient products to achieve profitability;
- our ability to raise sufficient capital to enable us to reach a level of sales sufficient to achieve profitability on terms favorable to us;
- we are able to successfully design, manufacture, market, distribute and sell our newly introduced line of consumer oriented products;
- effective management of the planned ramp up of our domestic and international operations;

Table of Contents

- our ability to successfully develop and maintain strategic relationships with key partners, including OEMs, system integrators, distributors, retailers and e-commerce companies, who deal directly with end users in our target markets;
- our ability to maintain the listing of our common stock on the NASDAQ Global Market or Capital Market;
- our ability to achieve projected operational performance and cost metrics;
- our ability to enter into commercially viable licensing, joint venture, or other commercial arrangements; and
- availability of raw materials.

Basis of Presentation: Our activities to date have consisted substantially of raising capital, research and development, establishment and development of our production plant, product development and establishing a sales channel for our line of consumer products which is sold under the EnerPlex™ brand. A development stage entity is defined as an entity devoting substantially all of its efforts to establishing a new business and for which either a) planned principal operations have not commenced or b) planned principal operations have commenced, but there has been no significant revenue therefrom. Revenues to date have been primarily generated from our governmental research and development contracts and have not been significant. Our planned principal operations to commercialize flexible PV modules and PV integrated electronics have commenced, but have generated limited revenue to date. The EnerPlex™ brand of consumer oriented products was introduced in 2012. Despite experiencing substantial sequential growth in the third and fourth quarters of 2013, total revenue to date has not been significant. Accordingly, we are considered to be in the development stage and have provided additional disclosure of inception to date activity in our Statements of Operations, Statements of Stockholders' Equity and Statements of Cash Flows. Additionally, due to our development stage nature, the majority of our costs are considered to be research and development costs.

Significant Accounting Policies

Related Party Transactions: We are party to several operating agreements, including a Joint Development Agreement, a Supply Agreement, a Contract Manufacturing Agreement, and a Services Agreement with TFG Radiant, which is also our largest shareholder. Accounting for transactions under these agreements is consistent with those defined in our Significant Accounting Policies. Additional disclosure of related party transactions is included in our financial statements and footnotes.

Revenue Recognition:

Product revenue - We are in the development stage and we generated product revenues of $1,118,000 for the year ended December 31, 2013. Product revenue is generated from commercial sales of flexible PV modules and PV integrated consumer electronics. Products are sold through our own website and through the use of online retailers and distributors. Revenue is recognized as products are shipped or delivered and title has transferred to the customer. In certain instances, we have agreed to refund a portion of the purchase price to customers if our standard prices decrease. We estimate the effect of this price protection and record the difference as a reduction of revenue at the time of sale. Estimated costs of returns and allowances and discounts are accrued as a reduction to sales when revenue is recognized.

Some of our distributor relationships allow for discounts to be taken for prompt payment and to fund co-op advertising costs. These discounts are taken as credits against outstanding receivable balances and recorded net of revenue. Large co-op advertising campaigns, funded either by cash payments by us or as credits against outstanding receivables, are recorded as advertising expense included in Selling, general and administrative costs if, and only if, the following criteria are met: 1) we received an identifiable benefit (goods or services) in exchange for the consideration, with the identifiable benefit being sufficiently separable from the distributor's purchase of our products; and 2) we can reasonably estimate the fair value of the identifiable benefit. If the amount of consideration paid by us exceeds the estimated fair value of the benefit received, that excess amount shall be characterized as a reduction of revenue.

Government contracts revenue - Revenue from governmental research and development contracts is generated under terms that are cost plus fee or firm fixed price. Revenue from cost plus fee contracts is recognized as costs are incurred on the basis of direct costs plus allowable indirect costs and an allocable portion of the fixed fee. Revenue from firm fixed price contracts is recognized under the percentage-of-completion method of accounting, with costs and estimated profits included in contract revenue as work is performed. If actual and estimated costs to complete a contract indicate a loss, provision is made currently for the loss anticipated on the contract.

Convertible Preferred Stock: During the second and third quarter of 2013, we issued Series A preferred stock and warrants. Upon issuance, the Series A preferred stock was evaluated under FASB ASC 480, “Distinguishing Liabilities from Equity" and it was determined the Series A preferred stock was not within the scope of ASC 480; therefore, the Series A preferred stock was not considered a liability under ASC 480. The warrants associated with the Series A preferred stock offering were also not considered a liability as assessed under ASC 480.

Table of Contents

Under FASB ASC 470, “ Debt with Conversion Features and Other Options” (“ASC 470"), the proceeds from issuance must be allocated to both the Series A preferred stock and the warrants using the relative fair value method. The allocation of proceeds to the warrants created a discount in the fair value of the Series A Preferred Stock in the amount of $1.1 million. Because the Series A preferred stock was immediately convertible, the discount was accreted as of the date of issuance, recorded as "Additional paid in capital" in Stockholders' Equity and "Deemed dividend on preferred stock and accretion of warrants" in the Statements of Operations.

The Series A preferred stock was then evaluated under ASC 470 to determine if there was a beneficial conversion feature (“BCF”). A convertible financial instrument includes a BCF if its conversion rate is lower than the issuer's stock price at the commitment date. The BCF compares the carrying value of the preferred stock after the value of any derivatives or equity instruments have been allocated from the proceeds to the transaction date value of the number of shares of common stock the holder would receive upon conversion. The calculation resulted in a BCF of $1.3 million. Because the Series A preferred stock was immediately convertible, the BCF was recorded as of the date of issuance as "Additional paid in capital" in Stockholders' Equity and "Deemed dividend on preferred stock and accretion of warrants" in the Statements of Operations.

During the fourth quarter of 2013, we issued Series B preferred stock. Upon issuance, the Series B preferred stock was evaluated under FASB ASC 480, “Distinguishing Liabilities from Equity" and it was determined the Series B preferred stock was not within the scope of ASC 480; therefore, the Series B preferred stock was not considered a liability under ASC 480.

Make-whole dividend liability: The Series A and Series B preferred stock issuances include make-whole provisions with variable rate dividends which are indexed to our own stock. The make-whole provisions have attributes of embedded derivatives and were evaluated under ASC 815, “Derivatives and Hedging" (“ASC 815”). We believe the Series A and Series B preferred stock are considered equity hosts for the purposes of evaluating the make-whole provisions for potential bifurcation. The Series A and Series B preferred stock holders may convert to common shares at any time after issuance. Upon conversion, the holders are entitled to a make-whole dividend which is payable in cash or common shares, at our election. We concluded the make-whole payments should be characterized as embedded derivatives under ASC 815. The fair value of make-whole dividend liabilities must be evaluated at each period end, with changes recorded as a component of Other Income/(Expense).

Inventories: All inventories are stated at the lower of cost or market, with cost determined using the weighted average method. As a development stage entity with limited production, inventory values do not include labor and overhead allocations which would be typical in higher volume production environments, however, such differences are not significant.

Inventory balances are frequently evaluated to ensure that they do not exceed net realizable value. The computation for net realizable value takes into account many factors, including expected demand, product lifecycle and development plans, module efficiency, quality issues, obsolescence and others. Management's judgment is required to determine reserves for obsolete or excess inventory. If actual demand and market conditions are less favorable than those estimated by management, additional inventory write downs may be required. The majority of our inventory is raw materials which have a long life cycle; obsolescence is not a significant factor in their valuation. During the years ended December 31, 2013 and December 31, 2012, we recognized lower of cost or market adjustments on certain raw materials in the amounts of $598,000 and $1,022,000, respectively. These expenses are included within “Research, development and manufacturing operations” expense in the Statements of Operations.

Impairment of Long-lived assets: We analyze our long-lived assets (property, plant and equipment) and definitive-lived intangible assets (patents) for impairment, both individually and as a group, whenever events or changes in circumstances indicate the carrying amount of the assets may not be recoverable. Events that might cause impairment would include significant current period operating or cash flow losses associated with the use of a long-lived asset or group of assets combined with a history of such losses, significant changes in the manner of use of assets and significant negative industry or economic trends. An undiscounted cash flow analysis is calculated to determine if an impairment exists. If an impairment is determined to exist, any related loss is calculated using the difference between the fair value and the carrying value of the assets. During the years ended December 31, 2013, 2012 and 2011, we incurred impairments of our manufacturing facilities and equipment in the amounts of $0.8

million, $3.4 million and $78.0 million, respectively, based on estimates prepared by management, as well as, in certain cases, valuation analysis by an independent firm.

Research, Development and Manufacturing Operations Costs: Research, development and manufacturing operations expenses were $21,343,000 and $20,729,000 for the years ended December 31, 2013 and 2012, respectively. Research, development and manufacturing operations expenses include: 1) technology development costs, which include expenses incurred in researching new technology, improving existing technology and performing federal government research and development contracts, 2) product development costs, which include expenses incurred in developing new products and lowering product design costs, and 3) pre-production and production costs, which include engineering efforts to improve production processes, material yields and equipment utilization, and manufacturing efforts to produce saleable product. Research, development and manufacturing operations costs are expensed as incurred, with the exception of costs related to inventoried raw materials, work-in-process and

Table of Contents

finished goods, which are expensed as products are sold, assuming the resulting product has been completed, tested and is ready for significant commercial manufacturing. For the twelve months ended December 31, 2013, technology development costs were $1,148,000, product development costs were $2,101,000 and production and pre-production costs were $18,094,000. For the twelve months ended December 31, 2012, technology development costs were $1,542,000, product development costs were $1,546,000 and production and pre-production costs were $17,641,000.

Share-Based Compensation: We measure and recognize compensation expense for all share-based payment awards made to employees, officers, directors, and consultants based on estimated fair values. We estimate the fair value of share-based payment awards on the date of grant using an option-pricing model. The value of the portion of the award that is ultimately expected to vest is recognized as expense over the requisite service period in our statements of operations included herein. Share-based compensation is based on awards ultimately expected to vest and is reduced for estimated forfeitures. Forfeitures are estimated at the time of grant and revised, as necessary, in subsequent periods if actual forfeitures differ from those estimates. For purposes of determining estimated fair value of share-based payment awards on the date of grant, we use the Black-Scholes option-pricing model ("Black-Scholes Model") for option awards. The Black-Scholes Model requires the input of highly subjective assumptions. Because our employee stock options may have characteristics significantly different from those of traded options, and because changes in the subjective input assumptions can materially affect the fair value estimate, in management's opinion, the existing models may not provide a reliable single measure of the fair value of our employee stock options. Management will continue to assess the assumptions and methodologies used to calculate estimated fair value of share-based compensation. Circumstances may change and additional data may become available over time, which result in changes to these assumptions and methodologies, which could materially impact our fair value determination. We estimate the fair value of our restricted stock awards at our stock price on the grant date.

The accounting guidance for share-based compensation may be subject to further interpretation and refinement over time. There are significant differences among option valuation models, and this may result in a lack of comparability with other companies that use different models, methods and assumptions. If factors change and we employ different assumptions in the accounting for share-based compensation in future periods, or if we decide to use a different valuation model, the compensation expense we record in the future may differ significantly from what we have recorded in the current period and could materially affect our loss from operations, net loss and net loss per share.

Use of Estimates: The preparation of financial statements in conformity with U.S. generally accepted accounting principles ("GAAP") requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of financial statements and the reported amounts of revenues and expenses during the reporting period. Actual results could differ from those estimates.

Results of Operations

Comparison of the Years Ended December 31, 2013 and 2012

Our activities to date have substantially consisted of raising capital, business and product development, research and development and the development of our production lines.

Revenues. Our revenues were $1,316,000 for the year ended December 31, 2013 compared to $1,197,000 for the year ended December 31, 2012, an increase of $119,000. Revenues for the years ended December 31, 2013 and December 31, 2012 included product sales of $1,118,000 and $578,000, respectively. Revenues earned on our government research and development contracts decreased by $420,000 for the year ended December 31, 2013 due to the winding down of several government contracts.

Research, development and manufacturing operations costs. Research, development and manufacturing operations costs were $21,343,000 for the year ended December 31, 2013 compared to $20,729,000 for the year ended December 31, 2012, an increase of $614,000. Research, development and manufacturing operations costs include the costs incurred for product development, pre-production and production activities in our manufacturing facility. Research, development and manufacturing operations costs also include costs related to technology development and governmental contracts. Costs related to product development, pre-production and production activities increased by $1,008,000. The cost increases were comprised of personnel related costs of $1,101,000, materials and equipment related costs of $220,000 and consulting and contract services of $175,000, partially offset by decreases in facility

related costs of $420,000, stock option expense of $56,000 and other manufacturing related costs of $21,000. Technology development and government contract costs decreased by $394,000. The cost decreases were comprised of consulting and contract services of $280,000, facilities costs of $69,000 and materials and equipment related costs of $45,000.

Selling, general and administrative. Selling, general and administrative expenses were $7,390,000 for the year ended December 31, 2013 compared to $5,008,000 for the year ended December 31, 2012, an increase of $2,382,000. This increase is primarily the result of increases in legal expense of $1,090,000, consulting and contract related services of $922,000 and marketing

Table of Contents

expense of $714,000, partially offset by reductions in stock options expense of $227,000 and equipment moving expenses of $168,000.

Impairment loss. Impairment losses incurred as a result of write downs of Property, Plant and Equipment were $822,000 and $3,402,000 for years ended December 31, 2013 and 2012, respectively. The impairment loss incurred during both 2013 and 2012 was the result of certain manufacturing equipment no longer being utilized for its intended purpose.

Other Income/(Expense), net. Other Income/(Expense) was $576,000 net expense for the year ended December 31, 2013 compared to $828,000 net expense for the year ended December 31, 2012, a decrease of $252,000. This decrease is the result of a decrease in contract cancellation loss of $586,000, partially offset by an increase of $160,000 in loss on extinguishment of liabilities, an increase in interest expense of $160,000 and a decrease in interest income of $20,000.

Change in fair value of make-whole dividend liability. Change in fair value of make-whole dividend liability was $1,315,000 for the year ended December 31, 2013. This expense is the result of an increase in the fair value of make-whole dividends payable to the holders of Series A and Series B preferred stock.

Net Loss. Our Net Loss was $30,131,000 for the year ended December 31, 2013, compared to a Net Loss of $28,770,000 for the year ended December 31, 2012, an increase in Net Loss of $1,361,000. The increase in Net Loss for the year ended December 31, 2013 can be summarized in variances in significant account activity as follows:

	(Increase) decrease in Net Loss For the Year Ended December 31, 2013 Compared to the Year Ended December 31, 2012
Revenues	$ 119,000
Research, development and manufacturing operations expenses	
Product development, pre-production and production	(1,064,000)
Technology and government contracts	374,000
Non-cash stock based compensation	76,000
Selling, general and administrative expenses	
Corporate selling, general and administrative	(2,609,000)
Non-cash stock based compensation	227,000
Impairment loss	2,579,000
Other Income/(Expense)	252,000
Change in fair value of make-whole dividend liability	(1,315,000)
Increase to Net Loss	$ (1,361,000)

Comparison of the Years Ended December 31, 2012 and 2011

Revenues. Our revenues were $1,197,000 for the year ended December 31, 2012 compared to $3,950,000 for the year ended December 31, 2011, a decrease of $2,753,000. Revenues for the years ended December 31, 2012 and December 31, 2011 included product sales of $578,000 and $538,000, respectively. Revenues earned on our government research and development contracts decreased by $2,793,000 for the year ended December 31, 2012 due to the winding down of several government contracts.

Research, development and manufacturing operations. Research, development and manufacturing operations costs were $20,729,000 for the year ended December 31, 2012 compared to $24,122,000 for the year ended December 31, 2011, a decrease of $3,393,000. Research, development and manufacturing operations costs include the costs incurred for product development, pre-production and production activities in our manufacturing facility. Research, development and manufacturing operations costs also include costs related to technology development and governmental contracts. Costs related to product development, pre-production and production activities decreased by $1,625,000. The cost decreases were comprised of depreciation and amortization of $1,329,000, materials and

equipment related costs of $1,173,000 and personnel related costs of $164,000, offset by increases in consulting and contract services of $1,045,000. Technology development and government contract

Table of Contents

costs decreased by $1,768,000. The cost decreases were comprised of consulting and contract services of $1,623,000 and personnel related costs of $132,000.

Selling, general and administrative. Selling, general and administrative expenses were $5,008,000 for the year ended December 31, 2012 compared to $7,131,000 for the year ended December 31, 2011, a decrease of $2,123,000. This decrease is primarily the result of reductions in personnel related costs of $1,054,000, stock option expense of $650,000, general supplies expense of $281,000, public company expenses of $103,000 and consulting and contract services of $86,000, partially offset by an increase in insurance expense of $127,000.

Impairment loss. Impairment losses incurred as a result of write downs of Property, Plant and Equipment and Deposits on manufacturing equipment were $3,402,000 and $78,000,000 for years ended December 31, 2012 and 2011, respectively. The impairment loss incurred during 2012 was the result of certain manufacturing equipment no longer being utilized for its intended purpose. The significant impairment loss incurred in 2011 was the result of adverse changes in market conditions, particularly the decreases in current and expected average selling prices for PV modules.

Other Income/(Expense), net. Other Income/(Expense) was $828,000 net expense for the year ended December 31, 2012 compared to $440,000 net expense for the year ended December 31, 2011, an increase of $388,000. This increase is primarily the result of an increase in interest expense of $159,000 and a net decrease foreign currency transaction gain of $151,000.

Net Loss. Our Net Loss was $28,768,000 for the year ended December 31, 2012, compared to a Net Loss of $105,744,000 for the year ended December 31, 2011, a decrease in Net Loss of $76,976,000. The decrease in Net Loss for the year ended December 31, 2012 can be summarized in variances in significant account activity as follows:

	(Increase) decrease in Net Loss For the Year Ended December 31, 2012 Compared to the Year Ended December 31, 2011
Revenues	$ (2,753,000)
Research, development and manufacturing operations expenses	
Product development, pre-production and production	1,639,000
Technology and government contracts	1,756,000
Non-cash stock based compensation	(2,000)
Selling, general and administrative expenses	
Corporate selling, general and administrative	1,472,000
Non-cash stock based compensation	650,000
Impairment loss	74,598,000
Interest expense	(159,000)
Interest income	(24,000)
Contract cancellation loss	14,000
Realized gain on investments	—
Realized gain (loss) on forward contracts	(64,000)
Foreign currency transaction gain (loss)	(151,000)
Increase to Net Loss	$ 76,976,000

Liquidity and Capital Resources

As of December 31, 2013, we had $3.3 million in cash and equivalents and working capital of $1.2 million. We are in the development stage and are currently incurring significant losses from operations as we work toward commercialization.

In May 2013, we completed the sale of 2,500,000 shares of common stock in a private placement for proceeds of $1.4 million. In August 2013, the Company completed the sale 750,000 shares of Series A preferred stock and warrants to purchase up to 2,625,000 shares of common stock in a private placement for gross proceeds of $6.0 million. In

November 2013, the Company completed the sale of 1,000 shares of Series B preferred stock in a private placement for gross proceeds of $10.0 million, $5.0 million of which was received in exchange for 500 Series B-1 shares with the closing of the transaction in November 2013, and the remaining $5.0 million was received in exchange for 500 Series B-1 shares in February 2014.

Table of Contents

We have commenced production at our manufacturing facility. We do not expect sales revenue and cash flows will be sufficient to support operations and cash requirements until we have fully implemented our new consumer products strategy. Changes in the level of expected operating losses, the timing of planned capital expenditures or other factors may negatively impact cash flows and reduce current cash and investments faster than anticipated. During the twelve months ended December 31, 2013, we used $20.3 million in cash for operations. In 2014, we expect to incur a base level of maintenance capital expenditures and relatively minor improvements to the existing asset base. Our primary significant long term obligation consists of a note payable of $6.4 million to a financial institution secured by a mortgage on our headquarters and manufacturing building in Thornton, Colorado. Total payments of $0.7 million, including principal and interest, will come due in 2014. Additional projected product revenues are not anticipated to result in a positive cash flow position for the year 2014 overall. Following the closing of the $5.0 million second tranche of our Series B Preferred Stock offering, which occurred in February 2014, we believe we will need to raise additional capital during 2014 in order the continue our current level of operations through the end of 2014 and into 2015. We continue to accelerate sales and marketing efforts related to our consumer products strategy through increased hiring and expansion of our sales channel. We have begun activities related to securing additional financing through strategic or financial investors, but there is no assurance we will be able to raise additional capital on acceptable terms or at all. If our revenues do not increase rapidly, and/or additional financing is not obtained, we will be required to significantly curtail operations to reduce costs and/or sell assets. Such actions would likely have an adverse impact on our future operations.

As a result of our recurring losses from operations, and the potential need for additional financing to fund our operating and capital requirements, there is uncertainty regarding our ability to maintain liquidity sufficient to operate our business effectively, which raises substantial doubt as to our ability to continue as a going concern.

Statements of Cash Flows Comparison of the Years Ended December 31, 2013 and 2012

For the year ended December 31, 2013, our cash used in operations was $20.3 million compared to $17.7 million for the year ended December 31, 2012, an increase of $2.6 million, which is primarily the result of an increase in net loss. For the year ended December 31, 2013, our cash used in investing activities was $0.9 million compared to cash provided by investing activities of $7.6 million for the year ended December 31, 2012, a net decrease of $8.5 million. The decrease in cash provided by (used in) investing activities is primarily the result of liquidating our investments of $12.6 million for operations in the year ended December 31, 2012, partially offset by a reduction in equipment purchases of $5.7 million. During the year ended December 31, 2013, negative operating cash flows of $20.3 million was funded through $12.2 million of net funding received from private placements and the use of cash and cash equivalents held at December 31, 2012.

Contractual Obligations

The following table presents our contractual obligations as of December 31, 2013. Our long-term debt obligation is related to our building loan and includes both principal and interest. Our purchase obligations include orders for equipment, inventory and operating expenses.

		Payments Due by Year (in thousands)			
Contractual Obligations	Total	Less Than 1 Year	1-3 Years	3-5 Years	More Than 5 Years
Long-term debt obligations	$11,768	$1,143	$3,631	$2,081	$4,913
Operating lease obligations	144	144	—	—	—
Purchase obligations	630	630	—	—	—
Total	$12,542	$1,917	$3,631	$2,081	$4,913

Off Balance Sheet Transactions

As of December 31, 2013, we did not have any off balance sheet arrangements as defined in Item 303(a)(4)(ii) of Regulation S-K.

Item 7A. Quantitative and Qualitative Disclosures About Market Risk

Foreign Currency Exchange Risk

Historically, we have purchased manufacturing equipment internationally, which exposes us to foreign currency risk.

From time to time we enter into foreign currency fair value hedges utilizing forward contracts designed to match scheduled contractual payments to equipment suppliers. Our objective is to fix the dollar amount of our foreign currency denominated manufacturing equipment purchases at the time of order. Although our hedging activity is designed to fix the dollar amount to be

Table of Contents

expended, the asset purchased is recorded at the spot foreign currency rate in effect as of the date of the payment to the supplier. The difference between the spot rate and the forward rate has been reported as gain or loss on forward contract. We cannot accurately predict future exchange rates or the overall impact of future exchange rate fluctuations on our business, results of operations and financial condition. All forward contracts entered into by us have been settled on the contract settlement dates, the last of which was settled in December 2009. We held no forward contracts during the years ended December 31, 2013, 2012 and 2011.

We hold no funds and have no future obligations denominated in foreign currencies as of December 31, 2013. Although our reporting currency is the U.S. Dollar, we may conduct business and incur costs in the local currencies of other countries in which we may operate, make sales and buy materials. As a result, we are subject to currency translation risk. Further, changes in exchange rates between foreign currencies and the U.S. Dollar could affect our future net sales and cost of sales and could result in exchange losses.

Interest Rate Risk

Our exposure to market risks for changes in interest rates relates primarily to our cash equivalents and investment portfolio. As of December 31, 2013, our cash equivalents consisted only of operating and savings accounts held with financial institutions. From time to time, we hold money market funds, investments in U.S. government securities and high quality corporate securities. The primary objective of our investment activities is to preserve principal and provide liquidity on demand, while at the same time maximizing the income we receive from our investments without significantly increasing risk. The direct risk to us associated with fluctuating interest rates is limited to our investment portfolio, and we do not believe a change in interest rates will have a significant impact on our financial position, results of operations or cash flows.

Credit Risk

From time to time, we hold certain financial and derivative instruments that potentially subject us to credit risk. These consist primarily of cash, cash equivalents, restricted cash, investments, and forward foreign currency option contracts. We are exposed to credit losses in the event of nonperformance by the counter parties to our financial and derivative instruments. We place cash, cash equivalents, investments and forward foreign currency option contracts with various high quality financial institutions, and exposure is limited at any one institution. We continuously evaluate the credit standing of our counter party financial institutions.

Item 8. Financial Statements and Supplementary Data

The Financial Statements and Supplementary Data required by this item are included in Part IV, Item 15(a)(1) and are presented beginning on Page F-1.

Item 9. Changes in and Disagreements with Accountants on Accounting and Financial Disclosure

None.

Item 9A. Controls and Procedures

Evaluation of Disclosure Controls and Procedures

We maintain disclosure controls and procedures designed to ensure that information required to be disclosed in our reports filed or submitted under the Securities Exchange Act of 1934, as amended (the “Exchange Act”) is recorded, processed, summarized and reported within the time periods specified in Securities and Exchange Commission rules and forms. Our disclosure controls and procedures include, without limitation, controls and procedures designed to ensure that information required to be disclosed in our reports filed under the Exchange Act is accumulated and communicated to management as appropriate to allow timely decisions regarding required disclosures. Our management conducted an evaluation required by Rules 13a-15 and 15d-15 under the Exchange Act of the effectiveness of our disclosure controls and procedures as defined in Rules 13a-15 and 15d-15 under the Exchange Act as of December 31, 2013. Based on this evaluation, our management concluded the design and operation of our disclosure controls and procedures were effective as of December 31, 2013.

Management’s Report on Internal Control over Financial Reporting

Our management is responsible for establishing and maintaining adequate internal control over financial reporting, as defined in Rules 13a-15(f) and 15d-15(f) under the Exchange Act. Our system of internal control over financial reporting is 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

in the United States of America and includes those policies and procedures that:

Table of Contents

- pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of our assets;
- provide reasonable assurance transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and our receipts and expenditures are being made only in accordance with authorizations of our management and directors; and
- provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use or disposition of our assets that could have a material effect on our financial statements.

Our management conducted an evaluation of the effectiveness of our internal control over financial reporting as of December 31, 2013 based on the Internal Control — Integrated Framework (1992) issued by the Committee of Sponsoring Organizations of the Treadway Commission. Based on this evaluation, our management concluded our internal control over financial reporting was effective as of December 31, 2013. Our management reviewed the results of its assessment with the Audit Committee.

This annual report does not include an attestation report from our independent registered public accounting firm regarding internal control over financial reporting. Management's report was not subject to attestation by our registered public accounting firm pursuant to Sarbanes-Oxley Rule 404(c).

Changes in Internal Control over Financial Reporting

There were no changes in our internal control over financial reporting (as defined in Rules 13a-15(f) and 15d-15(f) under the Exchange Act) that occurred during the quarter ended December 31, 2013 that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

Item 9B. Other Information

None.

PART III

Item 10. Directors, Executive Officers and Corporate Governance

Incorporated by reference from the definitive proxy statement for our 2013 annual meeting of stockholders, which will be filed no later than 120 days after the close of our fiscal year ended December 31, 2013.

Item 11. Executive Compensation

Incorporated by reference from the definitive proxy statement for our 2013 annual meeting of stockholders, which will be filed no later than 120 days after the close of our fiscal year ended December 31, 2013.

Item 12. Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters

Incorporated by reference from the definitive proxy statement for our 2013 annual meeting of stockholders, which will be filed no later than 120 days after the close of our fiscal year ended December 31, 2013.

Securities Authorized for Issuance under Equity Compensation Plans

The following table sets forth information as of December 31, 2013 relating to all of our equity compensation plans:

	Number of securities to be issued upon exercise of outstanding options, warrants and rights (1)	Weighted average exercise price of outstanding options, warrants and rights	Number of securities remaining available for future issuance under equity compensation plans
Equity compensation plans approved by security holders	1,312,028	$ 1.95	2,188,984

(1) This column does not include 15,500 restricted stock awards or units.

Item 13. Certain Relationships and Related Transactions, and Director Independence

Table of Contents

Incorporated by reference from the definitive proxy statement for our 2013 annual meeting of stockholders, which will be filed no later than 120 days after the close of our fiscal year ended December 31, 2013.

Item 14. Principal Accounting Fees and Services

Incorporated by reference from the definitive proxy statement for our 2013 annual meeting of stockholders, which will be filed no later than 120 days after the close of our fiscal year ended December 31, 2013.

PART IV

Item 15. Exhibits and Financial Statement Schedules

(a) The following documents are filed as part of this Annual Report on Form 10-K:

(1) Financial Statements—See Index to Financial Statements at Item 8 of the Annual Report on Form 10-K.

(2) Financial Statement Schedules—Supplemental schedules are not provided because of the absence of conditions under which they are required or because the required information is given in the financial statements or notes thereto.

(3) Exhibits: See Item 15(b) below.

(b) Exhibits: The exhibits listed on the accompanying Index to Exhibits on this Form 10-K are filed or incorporated into this Form 10-K by reference.

Table of Contents

ASCENT SOLAR TECHNOLOGIES, INC.
SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized on the 28th day of March, 2014.

ASCENT SOLAR TECHNOLOGIES, INC.

By: /S/ VICTOR LEE
Lee Kong Hian (aka Victor Lee)
President and Chief Executive Officer

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

Signature	Capacities	Date
/S/ VICTOR LEE Lee Kong Hian (aka Victor Lee)	President & Chief Executive Officer and a Director (Principal executive officer)	March 28, 2014
/S/ WILLIAM M. GREGORAK William M. Gregorak	Vice President and Chief Financial Officer (Principal financial and accounting officer)	March 28, 2014
/S/ AMIT KUMAR Amit Kumar, Ph.D.	Chairman of the Board of Directors	March 28, 2014
/S/ WINSTON XU Xu Biao (aka Winston Xu)	Director	March 28, 2014
/S/ G. THOMAS MARSH G. Thomas Marsh	Director	March 28, 2014
/S/ KIM J. HUNTLEY Kim J. Huntley	Director	March 28, 2014

Table of Contents

Ascent Solar Technologies, Inc.
Index to Financial Statements

	Page
Report of Independent Registered Public Accounting Firm	F- 1
Balance Sheets—As of December 31, 2013 and 2012	F- 2
Statements of Operations—For the years ended December 31, 2013, 2012 and 2011 and for the period from inception (October 18, 2005) through December 31, 2013	F- 3
Statements of Stockholders' Equity—For the period from inception (October 18, 2005) through December 31, 2013	F- 4
Statements of Cash Flows—For the years ended December 31, 2013, 2012, and 2011 and for the period from inception (October 18, 2005) through December 31, 2013	F- 8
Notes to Financial Statements	F- 9

Table of Contents

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Board of Directors
Ascent Solar Technologies, Inc.
Thornton, Colorado

We have audited the accompanying balance sheets of Ascent Solar Technologies, Inc. (a Development Stage Company) as of December 31, 2013 and 2012, and the related statements of operations, stockholders' equity and cash flows for the years ended December 31, 2013, 2012 and 2011 and for the period from inception (October 18, 2005) through December 31, 2013. 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 audits to obtain reasonable assurance about whether the financial statements are free of material misstatement. The Company is not required to have, nor were we engaged to perform, an audit of its internal control over financial reporting. Our audits included consideration of internal control over financial reporting as a basis for designing audit procedures that are appropriate in the circumstances, but not for the purposes of expressing an opinion on the effectiveness of the Company's internal control over financial reporting. Accordingly, we express no such opinion. An audit also includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements, 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 financial statements referred to above present fairly, in all material respects, the financial position of Ascent Solar Technologies, Inc. as of December 31, 2013 and 2012, and the results of its operations and its cash flows for the years ended December 31, 2013, 2012 and 2011 and for the period from inception (October 18, 2005) through December 31, 2013 in conformity with U.S. generally accepted accounting principles.

The accompanying financial statements have been prepared assuming that the Company will continue as a going concern. As discussed in Note 4 to the financial statements, the Company is in the development stage and is currently incurring significant losses from operations. The Company's current working capital is not expected to be sufficient to fund operations through December 31, 2014. These factors raise substantial doubt about the Company's ability to continue as a going concern. Management's plans in regard to these matters also are described in Note 4. The financial statements do not include any adjustments that might result from the outcome of this uncertainty.

/s/ HEIN & ASSOCIATES LLP

Denver, Colorado
March 28, 2014

Table of Contents

ASCENT SOLAR TECHNOLOGIES, INC.
(A Development Stage Company)

BALANCE SHEETS

	December 31, 2013	December 31, 2012
ASSETS		
Current Assets:		
Cash and cash equivalents	$3,318,155	$12,621,477
Trade receivables	458,076	100,164
Related party receivables and deposits	21,122	596,339
Inventories	1,887,612	2,159,553
Prepaid expenses and other current assets	1,157,484	235,305
Total current assets	6,842,449	15,712,838
Property, Plant and Equipment:	38,614,905	39,979,013
Less accumulated depreciation and amortization	(17,850,688)	(12,725,298)
	20,764,217	27,253,715
Other Assets:		
Patents, net of amortization of $83,364 and $48,150, respectively	879,541	500,879
Other non-current assets	52,813	56,563
	932,354	557,442
Total Assets	$28,539,020	$43,523,995
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current Liabilities:		
Accounts payable	$442,754	$855,373
Accrued expenses	1,800,369	1,788,635
Current portion of long-term debt	282,960	264,935
Make-whole dividend liability	3,146,156	—
Total current liabilities	5,672,239	2,908,943
Accrued Litigation Settlement, net of current portion	1,317,500	—
Long-Term Debt	6,067,175	6,350,135
Accrued Warranty Liability	47,937	38,187
Commitments and Contingencies (Notes 4 & 14)		
Stockholders' Equity:		
Series A preferred stock, $.0001 par value; 750,000 shares authorized and issued; 362,390 shares outstanding as of December 31, 2013 ($4,000,786 Liquidation Preference)	36	—
Series B-1 preferred stock, $.0001 par value; 1,000 shares authorized and 500 shares issued; 350 shares outstanding as of December 31, 2013 ($5,544,490 Liquidation Preference)	—	—
Common stock, $0.0001 par value, 125,000,000 shares authorized; 61,748,524 and 51,143,906 shares issued and outstanding, respectively	6,175	5,114
Additional paid in capital	263,270,005	245,996,950
Deficit accumulated during the development stage	(247,842,047)	(211,775,334)
Total stockholders' equity	15,434,169	34,226,730

Total Liabilities and Stockholders' Equity	$28,539,020	$43,523,995

The accompanying notes are an integral part of these financial statements.

Table of Contents

ASCENT SOLAR TECHNOLOGIES, INC.
(A Development Stage Company)

STATEMENTS OF OPERATIONS

	For the Years Ended December 31,			For the Period from Inception (October 18, 2005) Through December 31, 2013
	2013	2012	2011	
Revenues				
Products *	$1,117,524	$578,352	$538,005	$3,045,787
Government contracts	198,953	618,811	3,411,906	9,866,002
Total Revenues	1,316,477	1,197,163	3,949,911	12,911,789
Costs and Expenses				
Research, development and manufacturing operations	21,342,519	20,728,553	24,121,766	121,756,756
Selling, general and administrative	7,390,884	5,008,388	7,130,530	48,221,301
Impairment loss	822,350	3,401,610	78,000,000	83,993,440
Total Costs and Expenses	29,555,753	29,138,551	109,252,296	253,971,497
Loss from Operations	(28,239,276)	(27,941,388)	(105,302,385)	(241,059,708)
Other Income/(Expense)				
Other Income/(Expense), net	(576,292)	(828,029)	(440,230)	468,806
Change in fair value of make-whole dividend liability	(1,315,383)	—	—	(1,315,383)
Total Other Income/(Expense)	(1,891,675)	(828,029)	(440,230)	(846,577)
Net Loss	$(30,130,951)	$(28,769,417)	$(105,742,615)	$(241,906,285)
Deemed dividends on preferred stock and accretion of warrants	(5,935,762)	—	—	(5,935,762)
Net Loss applicable to common stockholders	$(36,066,713)	$(28,769,417)	$(105,742,615)	$(247,842,047)
Net Loss Per Share (Basic and diluted)	$(0.66)	$(0.66)	$(3.02)	
Weighted Average Common Shares Outstanding (Basic and diluted)	54,556,877	43,850,322	34,985,914	

* Includes related party revenue of $142,500 and $404,680 for the years ended December 31, 2013 and 2012, respectively. See Note 13.

The accompanying notes are an integral part of these financial statements.

Table of Contents

ASCENT SOLAR TECHNOLOGIES, INC.
(A Development Stage Company)

STATEMENTS OF STOCKHOLDERS' EQUITY
For the Period from Inception (October 18, 2005) through December 31, 2013

	Common Stock		Preferred Stock		Additional Paid-In Capital	Accumulated Deficit	Accumulated Other Comprehensive Income	Total Stockholders' Equity
	Shares	Amount	Shares	Amount				
Balance at inception, October 18, 2005	—	$—	—	$—	$—	$—	$ —	$—
Proceeds from sale of common stock (11/05 @ $.04 per share)	972,000	97	—	—	38,783	—	—	38,880
Founders stock	—	—	—	—	933,120	—	—	933,120
Stock based compensation	—	—	—	—	26,004	—	—	26,004
Net loss	—	—	—	—	—	(1,207,234)	—	(1,207,234)
Balance, December 31, 2005	972,000	$97	—	$—	$997,907	$(1,207,234)	$ —	$(209,230)
Transfer of assets at historical cost (1/06 @ $0.03 per share)	1,028,000	103	—	—	31,097	—	—	31,200
Proceeds from IPO (7/06 @ $5.50 per unit)	3,000,000	300	—	—	16,499,700	—	—	16,500,000
IPO costs	—	—	—	—	(2,392,071)	—	—	(2,392,071)
Stock issued to bridge loan lenders (7/06 @ $2.75 per share)	290,894	29	—	—	799,971	—	—	800,000
Exercise of stock options (9/06 & 12/06 @ $0.10 per share)	31,200	3	—	—	3,117	—	—	3,120
Stock based compensation	—	—	—	—	348,943	—	—	348,943
Net loss	—	—	—	—	—	(4,180,912)	—	(4,180,912)
Balance, December 31, 2006	5,322,094	$532	—	$—	$16,288,664	$(5,388,146)	$ —	$10,901,050
Exercise of stock options (1/07 -12/07 @ $.10) (7/07 - 12/07 @ $4.25) (9/07 - 12/07 @ $2.51 -$2.76)	169,963	17	—	—	346,417	—	—	346,434
Conversion of Class A public warrants at $6.60	3,098,382	310	—	—	20,449,011	—	—	20,449,321
Redemption of Class A public warrants at $0.25 per share	—	—	—	—	(48,128)	—	—	(48,128)
	11,000	1	—	—	120,999	—	—	121,000

Conversion of Class B public warrants at $11.00 per share								
Proceeds from private placement: Common stock (3/07 @ $5.77 and 8/07 @ $7.198)	2,534,462	254	—	—	15,962,003	—	—	15,962,257
Proceeds from private placement: Class B public warrants (8/07 @ $1.91)	—	—	—	—	3,754,468	—	—	3,754,468
Private placement costs	—	—	—	—	(75,807)	—	—	(75,807)
Exercise of representative's warrants (9/07 - 11/07 @ $6.60 per unit)	300,000	30	—	—	1,979,970	—	—	1,980,000
Stock based compensation	—	—	—	—	1,734,879	—	—	1,734,879
Net loss	—	—	—	—	—	(6,503,419)	—	(6,503,419)
Balance, December 31, 2007	11,435,901	$1,144	—	$—	$60,512,476	$(11,891,565)	$ —	$48,622,055

The accompanying notes are an integral part of these financial statements.

Table of Contents

ASCENT SOLAR TECHNOLOGIES, INC.
(A Development Stage Company)

STATEMENTS OF STOCKHOLDERS' EQUITY
(Continued)
For the Period from Inception (October 18, 2005) through December 31, 2013

	Common Stock		Preferred Stock		Additional Paid-In Capital	Accumulated Deficit	Accumulated Other Comprehensive Income	Total Stockholders' Equity
	Shares	Amount	Shares	Amount				
Balance, December 31, 2007	11,435,901	$1,144	—	$—	$60,512,476	$(11,891,565)	$ —	$48,622,055
Components of comprehensive loss								
Unrealized gain on investments	—	—	—	—	—	—	331,068	331,068
Net loss	—	—	—	—	—	(13,215,076)	—	(13,215,076)
Total comprehensive loss								(12,884,008)
Exercise of stock options (1/08 - 12/08 @ $0.10, $2.73, $2.90 & $4.25)	133,137	13	—	—	120,520	—	—	120,533
Conversion of Class B public warrants at $11.00 per share	98,800	10	—	—	1,086,790	—	—	1,086,800
Proceeds from private placement: Common stock (3/08 @ $9.262 & 10/08 @$6.176)	4,763,698	476	—	—	36,647,217	—	—	36,647,693
Proceeds from private placement: Class B public warrants (3/08 @ $3.954)	—	—	—	—	6,681,884	—	—	6,681,884
Exercise of representative's warrants (1/08 @ $6.60 per unit)	75,000	8	—	—	494,992	—	—	495,000
Proceeds from shareholder under Section 16(b)	—	—	—	—	148,109	—	—	148,109
Proceeds from secondary public offering (5/08 @ $14.00)	4,370,000	437	—	—	61,179,563	—	—	61,180,000
Costs of secondary public offering	—	—	—	—	(4,361,358)	—	—	(4,361,358)
Issuance of Restricted Stock	69,846	7	—	—	(7)	—	—	—

Stock based compensation	—	—	—	—	1,881,399	—	—	1,881,399
Balance, December 31, 2008	20,946,382	$2,095	—	$—	$164,391,585	$(25,106,641)	$ 331,068	$139,618,107
Components of comprehensive loss								
Unrealized loss on investments	—	—	—	—	—	—	(334,080)	(334,080)
Net loss	—	—	—	—	—	(20,922,717)	—	(20,922,717)
Total comprehensive loss				—				(21,256,797)
Exercise of stock options (1/09 - 12/09 @ $0.10, $2.76 & $4.25)	105,169	10	—	—	339,606	—	—	339,616
Proceeds from private placement: Common stock (10/09 @ $6.50)	769,230	77	—	—	4,999,918	—	—	4,999,995
Proceeds from public offering (10/09 @ $6.50)	4,615,385	461	—	—	29,999,542	—	—	30,000,003
Costs of public offering	—	—	—	—	(2,062,866)	—	—	(2,062,866)
Issuance of Restricted Stock	147,679	15	—	—	(15)	—	—	—
Stock based compensation	—	—	—	—	2,676,957	—	—	2,676,957
Balance, December 31, 2009	26,583,845	$2,658	—	$—	$200,344,727	$(46,029,358)	$ (3,012)	$154,315,015

The accompanying notes are an integral part of these financial statements.

Table of Contents

ASCENT SOLAR TECHNOLOGIES, INC.
(A Development Stage Company)

STATEMENTS OF STOCKHOLDERS' EQUITY
(Continued)
For the Period from Inception (October 18, 2005) through December 31, 2013

	Common Stock		Preferred Stock		Additional Paid-In Capital	Accumulated Deficit	Accumulated Other Comprehensive Income	Total Stockholders' Equity
	Shares	Amount	Shares	Amount				
Balance, December 31, 2009	26,583,845	$2,658	—	$—	$200,344,727	$(46,029,358)	$ (3,012)	$154,315,015
Components of comprehensive loss								
Unrealized loss on investments	—	—	—	—	—	—	2,786	2,786
Net loss	—	—	—	—	—	(31,233,718)	—	(31,233,718)
Total comprehensive loss								(31,230,932)
Proceeds from public offering (11/10 @ $4.15)	5,250,000	525	—	—	21,786,975	—	—	21,787,500
Costs of public offering	—	—	—	—	(1,409,937)	—	—	(1,409,937)
Exercise of stock options (1/10 - 12/10 @ $0.10, $2.90, $2.73, $2.76 & $3.17)	161,330	16	—	—	390,985	—	—	391,001
Issuance of Restricted Stock	270,412	27	—	—	(27)	—	—	—
Stock based compensation	—	—	—	—	2,713,468	—	—	2,713,468
Balance, December 31, 2010	32,265,587	$3,226	—	$—	$223,826,191	$(77,263,076)	$ (226)	$146,566,115
Components of comprehensive loss								
Unrealized loss on investments	—	—	—	—	—	—	1,245	1,245
Net loss	—	—	—	—	—	(105,743,860)	—	(105,743,860)
Total comprehensive loss								(105,742,615)
Proceeds from private offering (8/11 @ $1.15)	6,400,000	640	—	—	7,359,360	—	—	7,360,000
Costs of private offering	—	—	—	—	(123,973)	—	—	(123,973)
	386,050	39	—	—	305,745	—	—	305,784

Net Proceeds from At-The-Market offering sales (10/11 - 11/11, $0.81 - $0.83)								
Exercise of stock options (1/11 - 9/11 @ $0.10)	57,000	6	—	—	5,694	—	—	5,700
Issuance of Common Stock to service provider (5/11 @ $1.31)	45,000	5	—	—	58,945	—	—	58,950
Issuance of Restricted Stock	191,822	19	—	—	(19)	—	—	—
Stock based compensation	—	—	—	—	1,572,607	—	—	1,572,607
Balance, December 31, 2011	39,345,459	$3,935	—	$—	$233,004,550	$(183,006,936)	$ 1,019	$50,002,568
Components of comprehensive loss								
Unrealized loss on investments	—	—	—	—	—	—	(1,019)	(1,019)
Net loss	—	—	—	—	—	(28,768,398)	—	(28,768,398)
Total comprehensive loss								(28,769,417)
Proceeds from public offering (9/12 @ $1.20)	9,166,700	916	—	—	10,999,123	—	—	11,000,039
Costs of private offering	—	—	—	—	(836,697)	—	—	(836,697)
Net Proceeds from At-The-Market offering sales (1/12 - 9/12, $0.50 - $1.83)	1,972,181	197	—	—	1,896,375	—	—	1,896,572
Exercise of stock options (8/12 - 9/12 @ $0.68)	13,750	1	—	—	9,349	—	—	9,350
Issuance of Restricted Stock	645,816	65	—	—	(65)	—	—	—
Stock based compensation	—	—	—	—	924,315	—	—	924,315
Balance, December 31, 2012	51,143,906	$5,114	—	$—	$245,996,950	$(211,775,334)	$ —	$34,226,730

The accompanying notes are an integral part of these financial statements.

Table of Contents

ASCENT SOLAR TECHNOLOGIES, INC.
(A Development Stage Company)

STATEMENTS OF STOCKHOLDERS' EQUITY
(Continued)
For the Period from Inception (October 18, 2005) through December 31, 2013

	Common Stock		Series A Preferred Stock		Series B-1 Preferred Stock		Additional Paid-In Capital	Accumulated Deficit	Total Stockholders' Equity
	Shares	Amount	Shares	Amount	Shares	Amount			
Balance, December 31, 2012	51,143,906	$5,114	—	$—	—	—	$245,996,950	(211,775,334)	$34,226,730
Proceeds from private placement: Common stock (5/13 @ $0.57)	2,500,000	250	—	—	—	—	1,424,750	—	1,425,000
Proceeds from issuance of Series A Preferred Stock (6/13 - 8/13 at $8.00)	—	—	750,000	75	—	—	5,999,925	—	6,000,000
Discount on Series A Preferred Stock issuance - Warrants (6/13 - 8/13 @ $0.90)	—	—	—	—	—	—	1,071,063	—	1,071,063
Discount on Series A Preferred Stock issuance - beneficial conversion feature	—	—	—	—	—	—	1,350,000	—	1,350,000
Cost of Series A Preferred Share issuance	—	—	—	—	—	—	(139,894)	—	(139,894)
Conversion of Series A Preferred Shares (9/13 - 10/13 @ $0.80, plus make-whole @ $0.83 - $1.07)	4,872,736	487	(387,610)	(39)	—	—	919,174	—	919,622
	—	—	—	—	500	—	5,000,000	—	5,000,000

Proceeds from issuance of Series B Preferred Stock (11/13 @ $10,000)									
Cost of Series B Preferred Share issuance	—	—	—	—	—	—	(72,589)	—	(72,589)
Conversion of Series B Preferred Shares (11/13 - 12/13 @ $1.15, plus make-whole @ $0.69 - $0.88)	2,476,474	248	—	—	(150)	—	923,898	—	924,146
Exercise of stock options (9/13 @ $0.68)	47,500	5	—	—	—	—	32,295	—	32,300
Issuance of Common Stock to a service provider (5/13 @ $0.65)	240,000	24	—	—	—	—	142,975	—	142,999
Issuance of Restricted Stock	467,908	47	—	—	—	—	(47)	—	—
Stock based compensation	—	—	—	—	—	—	621,505	—	621,505
Deemed dividends on preferred stock and accretion of warrants	—	—	—	—	—	—	—	(5,935,762)	(5,935,762)
Net Loss	—	—	—	—	—	—	—	(30,130,951)	(30,130,951)
Balance, December 31, 2013	61,748,524	$6,175	362,390	$36	350	$—	$263,270,005	$(247,842,047)	$15,434,169

The accompanying notes are an integral part of these financial statements.

Table of Contents

ASCENT SOLAR TECHNOLOGIES, INC.
(A Development Stage Company)

STATEMENTS OF CASH FLOWS

	For the Years Ended December 31,			For the Period from Inception (October 18, 2005) through December 31,
	2013	2012	2011	2013
Operating Activities:				
Net loss	$(30,130,951)	$(28,769,417)	$(105,742,615)	$ (241,906,285)
Adjustments to reconcile net loss to net cash used in operating activities:				
Depreciation and amortization	6,225,854	6,166,123	7,541,962	30,739,001
Stock based compensation	621,505	924,315	1,572,607	13,433,197
Common stock issued for services	142,999	—	58,950	201,949
Realized loss on forward contracts	—	—	(63,915)	1,430,766
Foreign currency transaction loss (gain)	—	5,365	(145,940)	(590,433)
Amortization of financing costs and discounts	—	—	—	998,565
Impairment loss	822,350	3,401,610	78,000,000	83,993,440
Contract cancellation loss	—	576,812	590,774	1,167,586
Loss on extinguishment of liabilities	159,842	—	—	159,842
Accrued litigation settlement	1,700,000	—	—	1,700,000
Change in fair value of make-whole dividend liability	1,315,383	—	—	1,315,383
Changes in operating assets and liabilities:				
Accounts receivable	(357,912)	241,923	142,939	(458,076)
Related party receivables and deposits	575,217	(596,339)	2,524	(21,122)
Inventories	271,941	309,570	(592,289)	(1,887,612)
Prepaid expenses and other current assets	(922,179)	151,319	123,724	(1,157,484)
Accounts payable	(412,619)	197,557	(435,089)	442,753
Related party payable	—	—	(53,808)	—
Accrued expenses	(370,766)	(281,906)	(691,346)	466,832
Deferred revenue	—	—	(250,705)	—
Warranty reserve	9,750	11,527	10,760	47,937
Net cash used in operating activities	(20,349,586)	(17,661,541)	(19,931,467)	(109,923,761)
Investing Activities:				
Purchases of available-for-sale securities	—	(638,572)	(28,215,821)	(907,118,828)
Maturities and sales of available-for-sale securities	—	13,253,650	33,087,378	907,118,828
Purchase of property, plant and equipment	(519,741)	(6,267,207)	(9,681,565)	(135,341,744)
Restricted cash for manufacturing equipment	—	1,427,053	1,832,297	—
Patent activity costs	(413,876)	(211,996)	(60,408)	(937,947)
Net cash provided by (used in) investing activities	(933,617)	7,562,928	(3,038,119)	(136,279,691)
Financing Activities:				
Proceeds from bridge loan financing	—	—	—	1,600,000
Repayment of bridge loan financing	—	—	—	(1,600,000)

Payment of debt financing costs	—	—	—	(273,565)
Payment of equity offering costs	(212,483)	—	—	(10,514,523)
Proceeds from debt	—	—	—	7,700,000
Repayment of debt	(264,936)	(648,059)	(582,257)	(2,449,866)
Proceeds from shareholder under Section 16(b)	—	—	—	148,109
Proceeds from issuance of stock and warrants	12,457,300	12,069,264	7,547,511	254,959,580
Redemption of Class A warrants	—	—	—	(48,128)
Net cash provided by financing activities	11,979,881	11,421,205	6,965,254	249,521,607
Net change in cash and cash equivalents	(9,303,322)	1,322,592	(16,004,332)	3,318,155
Cash and cash equivalents at beginning of period	12,621,477	11,298,885	27,303,217	—
Cash and cash equivalents at end of period	$3,318,155	$12,621,477	$11,298,885	$ 3,318,155
Supplemental Cash Flow Information:				
Cash paid for interest	$428,798	$271,055	$113,471	$ 545,383
Cash paid for income taxes	$—	$—	$—	$ —
Non-Cash Transactions:				
ITN initial contribution of assets for equity	$—	$—	$—	$ 31,200
Note with ITN and related capital expenditures	$—	$—	$—	$ 1,100,000
Non-cash conversions	$1,683,926	$—	$—	$ 1,683,926
Make-whole provision on convertible preferred stock	$3,514,699	$—	$—	$ 1,830,773
Beneficial conversion feature on convertible preferred stock	$2,421,063	$—	$—	$ 2,421,063

The accompanying notes are an integral part of these financial statements.

Table of Contents

ASCENT SOLAR TECHNOLOGIES, INC.
(A Development Stage Company)
NOTES TO CONDENSED FINANCIAL STATEMENTS
(Unaudited)

NOTE 1. ORGANIZATION

Ascent Solar Technologies, Inc. (“Ascent” or “the Company”) was incorporated on October 18, 2005 from the separation by ITN Energy Systems, Inc. (“ITN”) of its Advanced Photovoltaic Division and all of that division’s key personnel and core technologies. ITN, a private company incorporated in 1994, is an incubator dedicated to the development of thin film, photovoltaic (“PV”), battery, fuel cell and nano technologies. Through its work on research and development contracts for private and governmental entities, ITN developed proprietary processing and manufacturing know how applicable to PV products generally, and to Copper-Indium-Gallium-diSelenide (“CIGS”) PV products in particular. ITN formed Ascent to commercialize its investment in CIGS PV technologies. In January 2006, in exchange for 1,028,000 shares of common stock of Ascent, ITN assigned to Ascent certain CIGS PV technologies and trade secrets and granted to Ascent a perpetual, exclusive, royalty free worldwide license to use, in connection with the manufacture, development, marketing and commercialization of CIGS PV to produce solar power, certain of ITN’s existing and future proprietary and control technologies that, although non-specific to CIGS PV, Ascent believes will be useful in its production of PV modules for its target markets. Upon receipt of the necessary government approvals and pursuant to novation in early 2007, ITN assigned government funded research and development contracts to Ascent and also transferred the key personnel working on the contracts to Ascent.

Currently, the Company is producing consumer oriented products focusing on charging devices powered by or enhanced by the Company's solar modules. Products in these markets are priced based on the overall product value proposition rather than a commodity-style price per watt basis. The Company continues to develop new consumer products and has adjusted utilization of its equipment to meet near term sales forecasts.

NOTE 2. BASIS OF PRESENTATION

The Company’s activities to date have consisted substantially of raising capital, research and development, establishment and development of the Company's production plant, product development and establishing a sales channel for its line of consumer products which is sold under the EnerPlex™ brand. A development stage entity is defined as an entity devoting substantially all of its efforts to establishing a new business and for which either a) planned principal operations have not commenced or b) planned principal operations have commenced, but there has been no significant revenue therefrom. Revenues to date have been primarily generated from the Company’s governmental research and development contracts and have not been significant. The Company’s planned principal operations to commercialize flexible PV modules and PV integrated electronics have commenced, but have generated limited revenue to date. The EnerPlex™ brand of consumer oriented products was introduced in 2012. Despite experiencing substantial sequential growth in the third and fourth quarters of 2013, total revenue to date has not been significant. Accordingly, the Company is considered to be in the development stage and has provided additional disclosure of inception to date activity in its Statements of Operations, Statements of Stockholders’ Equity and Statements of Cash Flows. Additionally, due to the development stage nature of the Company, the majority of the Company’s costs are considered to be research and development costs.

NOTE 3. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

Cash Equivalents: The Company classifies all short-term investments in interest bearing bank accounts and highly liquid debt securities purchased with an original maturity of three months or less to be cash equivalents. The Company maintains cash balances which may exceed federally insured limits. The Company does not believe this results in significant credit risk.

Investments: Historically the Company has classified its investments as “available-for-sale.” Such investments are carried at fair value, based on quoted market prices with the unrealized holding gains and losses reported as “Other comprehensive income (loss)” in the Statements of Operations. Realized gains and losses on sales of securities are

computed using the specific identification method. The Company typically invests in highly rated securities with low probabilities of default. The Company's investment policy specifies minimum investment grade criteria, types of acceptable investments, concentration limitations and duration guidelines. The Company evaluates declines in market value for potential impairment. If the decline results in a value below cost and is determined to be other than temporary, the investment is written down to its impaired value and a new cost basis is established.

Fair Value Estimates: Fair value is defined as the exchange price that would be received for an asset or paid to transfer a liability (an exit price) in the principal or most advantageous market for the asset or liability in an orderly transaction between market participants on the measurement date. Valuation techniques used to measure fair value must maximize the use of observable

Table of Contents

inputs and minimize the use of unobservable inputs. The Company uses fair value hierarchy based on three levels of inputs, of which, the first two are considered observable and the last unobservable, to measure fair value:

- Level 1 - Quoted prices in active markets for identical assets or liabilities.
- Level 2 - Inputs other than Level 1 that are observable, either directly or indirectly, such as quoted prices for similar assets or liabilities; quoted prices in markets that are not active; or other inputs that are observable or can be corroborated by observable market data for substantially the full term of the assets or liabilities.
- Level 3 - Unobservable inputs that are supported by little or no market activity and that are significant to the fair value of the assets or liabilities

Certain long-lived assets and current liabilities have been measured at fair value on a recurring and non-recurring basis. See Note 6. Property, Plant and Equipment and Note 9. Make-whole Dividend Liability. The carrying value for cash and cash equivalents, accounts receivable, accounts payable, accrued expenses and other assets and liabilities approximate their fair values due to their short maturities.

Related Party Transactions: The Company is party to several operating agreements, including a Joint Development Agreement, a Supply Agreement, a Contract Manufacturing Agreement, and a Services Agreement with TFG Radiant Investment Group Ltd. and its affiliates (“TFG Radiant”), which is also the Company's largest shareholder. Accounting for transactions under these agreements is consistent with the Company's other significant accounting policies. See Note 3. Significant Accounting Policies.

Foreign Currencies: Bank account balances held in foreign currencies are translated to U.S. dollars utilizing the period end exchange rate. Gains or losses incurred in connection with the Company’s accounts held in foreign currency are recorded in “Other Income/(Expense)” on the Statements of Operations.

Revenue Recognition:

Product revenue - The Company is in the development stage and generated product revenues of $1,118,000 for the year ended December 31, 2013. Product revenue is generated from commercial sales of flexible PV modules and PV integrated consumer electronics, non-PV integrated power banks and associated accessories. Products are sold through the Company's own e-commerce website, online retailers, direct to retailers and indirectly to retailers through distributors. Revenue is recognized as products are shipped or delivered and title has transferred to the customer. In certain instances, the Company has agreed to refund a portion of the purchase price to customers if the Company's standard prices decrease. The Company estimates the effect of this price protection and records the difference as a reduction of revenue at the time of sale. Estimated costs of returns and allowances and discounts are accrued as a reduction to sales when revenue is recognized. See Note 3. Significant Accounting Policies, Advertising Costs, for accounting treatment related to cooperative advertising programs.

Government contracts revenue - Revenue from governmental research and development contracts is generated under terms that are cost plus fee or firm fixed price. Revenue from cost plus fee contracts is recognized as costs are incurred on the basis of direct costs plus allowable indirect costs and an allocable portion of the fixed fee. Revenue from firm fixed price contracts is recognized under the percentage-of-completion method of accounting, with costs and estimated profits included in contract revenue as work is performed. If actual and estimated costs to complete a contract indicate a loss, provision is made currently for the loss anticipated on the contract.

Advertising Costs: The Company advertises in print, television, online and through social media. The Company will also authorize customers to run advertising campaigns on its behalf through various media outlets. Advertising costs are expensed as incurred. Advertising expenses were $201,000, $13,000 and $0 for the years ended December 31, 2013, 2012 and 2011, respectively.

Some of the Company's distributor relationships allow for discounts to be taken to fund cooperative advertising programs. These discounts are applied as credits against outstanding receivable balances and recorded net of revenue. Large cooperating advertising campaigns, funded either by cash payments by the Company, or as credits against outstanding receivables, are expensed as incurred and included in Selling, general and administrative costs if, and only if, the following criteria are met: 1) the Company receives an identifiable benefit (goods or services) in exchange for the consideration, with the identifiable benefit being sufficiently separable from the distributor's purchase of the Company’s products; and 2) the Company can reasonably estimate the fair value of the identifiable benefit. If the amount of consideration paid by the Company exceeds the estimated fair value of the benefit received, that excess

amount shall be characterized as a reduction of revenue. Discounts taken for cooperative advertising programs have been minimal in amount.

Table of Contents

Shipping and Handling Costs: The Company classifies shipping and handling costs for products shipped to customers as a component of “Research, development and manufacturing operations” on the Company’s Statements of Operations. Customer payments of shipping and handling costs are recorded as a component of Product revenue.

Receivables and Allowance for Doubtful Accounts: Trade accounts receivable are recorded at the invoiced amount as the result of transactions with customers. The Company maintains allowances for doubtful accounts for estimated losses resulting from the inability of its customers to make required payments. The Company estimates the collectability of accounts receivable using analysis of historical bad debts, customer credit-worthiness and current economic trends. Reserves are established on an account-by-account basis. Account balances are written off against the allowance in the period in which the Company determines that is it probable that the receivable will not be recovered. The Company had no reserved accounts as of December 31, 2013 and 2012.

Product Warranties: The Company provides a limited warranty to the original purchaser of products against defective materials and workmanship. The Company also guarantees that standalone modules and PV integrated consumer electronics will achieve and maintain the stated conversion efficiency rating for certain products. Warranty accruals are recorded at the time of sale and are estimated based upon product warranty terms, historical experience and analysis of peer company product returns. The Company assesses the adequacy of its liabilities and makes adjustments as necessary based on known or anticipated warranty claims, or as new information becomes available.

Convertible Preferred Stock: During the second and third quarters of 2013, the Company issued Series A preferred stock and warrants. Upon issuance, the Series A preferred stock was evaluated under FASB ASC 480, “Distinguishing Liabilities from Equity" and it was determined the Series A preferred stock was not within the scope of ASC 480; therefore, the Series A preferred stock was not considered a liability under ASC 480. The warrants associated with the Series A preferred stock offering were also not considered a liability as assessed under ASC 480.

Under FASB ASC 470, “ Debt with Conversion Features and Other Options” (“ASC 470"), the proceeds from issuance must be allocated to both the Series A preferred stock and the warrants using the relative fair value method. The allocation of proceeds to the warrants created a discount in the fair value of the Series A Preferred Stock in the amount of $1.1 million. Because the Series A preferred stock was immediately convertible, the discount was accreted as of the date of issuance, recorded as "Additional paid in capital" in Stockholders' Equity and "Deemed dividends on preferred stock and accretion of warrants" in the Statements of Operations.

The Series A preferred stock was then evaluated under ASC 470 to determine if there was a beneficial conversion feature (“BCF”). A convertible financial instrument includes a BCF if its conversion rate is lower than the issuer's stock price at the commitment date. The BCF compares the carrying value of the preferred stock after the value of any derivatives or equity instruments have been allocated from the proceeds to the transaction date value of the number of shares of common stock the holder would receive upon conversion. The calculation resulted in a BCF of $1.4 million. Because the Series A preferred stock was immediately convertible, the BCF was recorded as of the date of issuance as "Additional paid in capital" in Stockholders' Equity and "Deemed dividends on preferred stock and accretion of warrants" in the Statements of Operations.

During the fourth quarter of 2013, the Company issued Series B preferred stock. Upon issuance, the Series B preferred stock was evaluated under FASB ASC 480, “Distinguishing Liabilities from Equity" and it was determined the Series B preferred stock was not within the scope of ASC 480; therefore, the Series B preferred stock was not considered a liability under ASC 480.

Make-whole dividend liability: The Series A and Series B preferred stock issuances include make-whole provisions with variable rate dividends which are indexed to the Company's own stock. The make-whole provisions have attributes of embedded derivatives and were evaluated under ASC 815, “Derivatives and Hedging" (“ASC 815”). The Company believes the Series A and Series B preferred stock are considered equity hosts for the purposes of evaluating the make-whole provisions for potential bifurcation. The Series A and Series B preferred stock holders may convert to common shares at any time after issuance. Upon conversion, the holders are entitled to a make-whole dividend which is payable in cash or common shares, at the Company's election. The Company concluded the make-whole payments should be characterized as embedded derivatives under ASC 815. The fair value of make-whole dividend liabilities must be evaluated at each period end, with changes recorded as a component of Other Income/(Expense).

Patents: At such time as the Company is awarded patents, patent costs are amortized on a straight-line basis over the legal life on the patents, or over their estimated useful lives, whichever is shorter. As of December 31, 2013, the Company had $880,000 of net patent costs, of which $253,000 represents costs net of amortization incurred for awarded patents, and the remaining $627,000 represents costs incurred for patent applications to be filed. During the year ended December 31, 2013, the Company capitalized $414,000 in patent costs as it worked to secure design rights and trademarks for newly developed products. Amortization expense was $35,000, $20,000 and $11,000 for the years ended December 31, 2013, 2012 and 2011, respectively. Amortization expense is expected to remain consistent or increase slightly in future periods.

Table of Contents

Inventories: All inventories are stated at the lower of cost or market, with cost determined using the weighted average method. As a development stage entity with limited production, inventory values do not include labor and overhead allocations which would be typical in higher volume production environments, however, such differences are not significant.

Inventory balances are frequently evaluated to ensure they do not exceed net realizable value. The computation for net realizable value takes into account many factors, including expected demand, product life cycle and development plans, module efficiency, quality issues, obsolescence and others. Management's judgment is required to determine reserves for obsolete or excess inventory. If actual demand and market conditions are less favorable than those estimated by management, additional inventory write downs may be required. The majority of the Company's inventory is raw materials which have a long life cycle; obsolescence is not a significant factor in their valuation. During the years ended December 31, 2013 and December 31, 2012, the Company recognized lower of cost or market adjustments on certain raw materials in the amounts of $598,000 and $1,022,000, respectively. These expenses are included within “Research, development and manufacturing operations” expense in the Statements of Operations.

Property, Plant and Equipment: Property, plant and equipment are recorded at the original cost to the Company. Assets are being depreciated over estimated useful lives of three to forty years using the straight-line method, as presented in the table below, commencing when the asset is placed in service. Leasehold improvements are depreciated over the shorter of the remainder of the lease term or the life of the improvements. Upon retirement or disposal, the cost of the asset disposed of and the related accumulated depreciation are removed from the accounts and any gain or loss is reflected in income. Expenditures for repairs and maintenance are expensed as incurred.

	Useful Lives in Years
Buildings	40
Manufacturing machinery and equipment	5 - 10
Furniture, fixtures, computer hardware/software	3 - 7
Leasehold improvements	life of lease

Interest Capitalization: Historically the Company has capitalized interest cost as part of the cost of acquiring or constructing certain assets during the period of time required to get the asset ready for its intended use. The Company capitalized interest to the extent that expenditures to acquire or construct an asset have occurred and interest cost has been incurred.

Impairment of Long-lived Assets: The Company analyzes its long-lived assets (property, plant and equipment) and definitive-lived intangible assets (patents) for impairment, both individually and as a group, whenever events or changes in circumstances indicate the carrying amount of the assets may not be recoverable. Events that might cause impairment would include significant current period operating or cash flow losses associated with the use of a long-lived asset or group of assets combined with a history of such losses, significant changes in the manner of use of assets and significant negative industry or economic trends. An undiscounted cash flow analysis is calculated to determine if impairment exists. If impairment is determined to exist, any related loss is calculated using the difference between the fair value and the carrying value of the assets. During the years ended December 31, 2013, 2012 and 2011, the Company incurred impairments of its manufacturing facilities and equipment in the amounts of $0.8 million, $3.4 million and $78.0 million, respectively. Impairments incurred in 2013 and 2012 were based on estimates prepared by management. The impairment incurred in 2011 was based on management estimates and a valuation analysis by an independent firm.

Net Loss per Common Share: Basic earnings per share does not include dilution and is computed by dividing income available to common stockholders by the weighted average number of shares outstanding during the period. Diluted earnings per share reflect the potential securities that could share in the earnings of the Company, similar to fully diluted earnings per share. Common stock equivalents outstanding as of December 31, 2013 of approximately 15.3 million shares have been omitted from loss per share because they are anti-dilutive. Common stock equivalents consist of stock options, unvested restricted stock, preferred stock and preferred stock make-whole dividend liability amounts, assuming the make-whole dividend liability is paid in common stock in lieu of cash. Net loss per common share was the same for both basic and diluted methods for the periods ended December 31, 2013, 2012 and 2011.

Research, Development and Manufacturing Operations Costs: Research, development and manufacturing operations expenses were $21,343,000 and $20,729,000 for the years ended December 31, 2013 and 2012, respectively. Research, development and manufacturing operations expenses include: 1) technology development costs, which include expenses incurred in researching new technology, improving existing technology and performing federal government research and development contracts, 2) product development costs, which include expenses incurred in developing new products and lowering product design costs, and 3) pre-production and production costs, which include engineering efforts to improve production processes, material yields and equipment utilization, and manufacturing efforts to produce saleable product. Research, development and manufacturing

Table of Contents

operations costs are expensed as incurred, with the exception of costs related to inventoried raw materials, work-in-process and finished goods, which are expensed as products are sold, assuming the resulting product has been completed, tested and is ready for significant commercial manufacturing. For the twelve months ended December 31, 2013, technology development costs were $1,148,000, product development costs were $2,101,000 and production and pre-production costs were $18,094,000. For the twelve months ended December 31, 2012, technology development costs were $1,542,000, product development costs were $1,546,000 and production and pre-production costs were $17,641,000.

Income Taxes: Deferred income taxes are provided using the liability method whereby deferred tax assets are recognized for deductible temporary differences and operating loss and tax credit carry forwards and deferred tax liabilities are recognized for taxable temporary differences. Temporary differences are the differences between the reported amounts of assets and liabilities and their tax bases. Deferred tax assets are reduced by a valuation allowance when, in the opinion of management, it is more likely than not that some portion or all of the deferred tax assets will not be realized. Deferred tax assets and liabilities are adjusted for the effects of the changes in tax laws and rates as of the date of enactment. Interest and penalties, if applicable, would be recorded in operations.

The Company has analyzed filing positions in all of the federal and state jurisdictions where it is required to file income tax returns, as well as all open tax years (2009-2013) in these jurisdictions. The Company believes its income tax filing positions and deductions will be sustained on audit and does not anticipate any adjustments that will result in a material adverse effect on the Company's financial condition, results of operations, or cash flows. Therefore, no reserves for uncertain income tax positions have been recorded.

Share-Based Compensation: The Company measures and recognizes compensation expense for all share-based payment awards made to employees, officers, directors, and consultants based on estimated fair values. The Company estimates the fair value of share-based payment awards on the date of grant using an option-pricing model for option awards. The value of the portion of the award that is ultimately expected to vest is recognized as expense over the requisite service period in the Company's Statements of Operations. Share-based compensation is based on awards ultimately expected to vest and is reduced for estimated forfeitures. Forfeitures are estimated at the time of grant and revised, as necessary, in subsequent periods if actual forfeitures differ from those estimates. For purposes of determining estimated fair value of share-based payment awards on the date of grant the Company uses the Black-Scholes option-pricing model ("Black-Scholes Model") for option awards. The Black-Scholes Model requires the input of highly subjective assumptions. Because the Company's employee stock options may have characteristics significantly different from those of traded options, and because changes in the subjective input assumptions can materially affect the fair value estimate, in management's opinion, the existing models may not provide a reliable single measure of the fair value of the Company's employee stock options. Management will continue to assess the assumptions and methodologies used to calculate estimated fair value of share-based compensation. Circumstances may change and additional data may become available over time, which result in changes to these assumptions and methodologies, which could materially impact the Company's fair value determination. The Company estimates the fair value of its restricted stock awards as its stock price on the grant date.

The accounting guidance for share-based compensation may be subject to further interpretation and refinement over time. There are significant differences among option valuation models, and this may result in a lack of comparability with other companies that use different models, methods and assumptions. If factors change and the Company employs different assumptions in the accounting for share-based compensation in future periods, or if the Company decides to use a different valuation model, the compensation expense the Company records in the future may differ significantly from the amount recorded in the current period and could materially affect its loss from operations, net loss and net loss per share.

Reclassifications: Certain reclassifications have been made to the 2011 and 2012 financial information to conform to the 2013 presentation. Such reclassifications had no effect on comprehensive losses for those periods.

Use of Estimates: The preparation of financial statements in conformity with U.S. generally accepted accounting principles ("GAAP") requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of financial statements and the reported amounts of revenues and expenses during the reporting period. Actual results could differ from those

estimates.

NOTE 4. LIQUIDITY AND CONTINUED OPERATIONS

As of December 31, 2013, the Company had $3.3 million in cash and working capital of $1.2 million. As discussed in Note 2, the Company is in the development stage and is currently incurring significant losses from operations as it works toward commercialization. In May 2013, the Company completed the sale of 2,500,000 shares of common stock in a private placement for proceeds of $1.4 million. In August 2013, the Company completed the sale 750,000 shares of Series A preferred stock and warrants to purchase up to 2,625,000 shares of common stock in a private placement for gross proceeds of $6.0 million. In November 2013, the Company completed the sale of 500 shares of Series B preferred stock in a private placement for gross

Table of Contents

proceeds of $10.0 million, $5.0 million of which was received with the closing of the transaction in November 2013 and the remaining $5.0 million was received in February 2014.

The Company has commenced production at its manufacturing facility. The Company does not expect sales revenue and cash flows will be sufficient to support operations and cash requirements until it has fully implemented its new consumer products strategy. Changes in the level of expected operating losses, the timing of planned capital expenditures or other factors may negatively impact cash flows and reduce current cash and investments faster than anticipated. During 2013 the Company used $20.3 million in cash for operations, or an average of $5.1 million per quarter. During the fourth quarter of 2013 the Company used $5.4 million in cash for operations. Absent any adjustments to expenses or significant additional financing, and without considering capital expenditures or significant increases in product sales at a positive margin, the Company's cash could be depleted during the second quarter 2014. In 2013, the Company expects to incur a base level of maintenance capital expenditures and relatively minor improvements to the existing asset base. The Company's primary significant long term obligation consists of a note payable of $6.4 million to a financial institution secured by a mortgage on its headquarters and manufacturing building in Thornton, Colorado. Total payments of $0.7 million, including principal and interest, will come due in 2014. Additional projected product revenues are not anticipated to result in a positive cash flow position for the year 2014 overall. As such, cash liquidity sufficient for the year ending December 31, 2014 will require additional financing. The Company continues to accelerate sales and marketing efforts related to its consumer products strategy through increased hiring and expansion of its sales channel. The Company has begun activities related to securing additional financing through strategic or financial investors, but there is no assurance the Company will be able to raise additional capital on acceptable terms or at all. If the Company's revenues do not increase rapidly, and/or additional financing is not obtained, the Company will be required to significantly curtail operations to reduce costs and/or sell assets. Such actions would likely have an adverse impact on the Company's future operations.

As a result of the Company’s recurring losses from operations, and the potential need for additional financing to fund its operating and capital requirements, there is uncertainty regarding the Company’s ability to maintain liquidity sufficient to operate its business effectively, which raises substantial doubt as to the Company’s ability to continue as a going concern.

On March 19, 2014, the Company received notice from NASDAQ stating that, due to the Company's continued non-compliance with the minimum $1.00 bid price requirement for continued listing, the Company was subject to delisting from the NASDAQ Global Market tier, pending a timely request for a hearing or a successful transfer of listing to the NASDAQ Capital Market tier. On March 27, 2014, the Company received approval to transfer its listing to the NASDAQ Capital Market tier, effective with opening of the market on March 28, 2014. The Company's common stock will continue to trade under the symbol “ASTI”. The NASDAQ Capital Market is a continuous trading market that operates in substantially the same manner as the NASDAQ Global Market.

Transfer of the Company's listing to the NASDAQ Capital Market resulted in an additional 180-day period within which to regain compliance with the $1.00 minimum bid price requirement, through September 15, 2014 (the "Compliance Date"). The Company intends to continue to monitor the bid price of its common stock. If the Company's common stock does not trade at a level that is likely to regain compliance with the NASDAQ requirements, the Company's Board of Directors may consider other options that may be available to achieve compliance. One option to regain compliance is a reverse stock split, however a reverse stock split could have negative implications. If at any time before the Compliance Date, the closing bid price of the Company's common stock is at least $1.00 per share for at least ten consecutive business days, the Company will regain compliance with the price requirement. There is no assurance that the Company can demonstrate compliance by the Compliance Date or comply with the terms of the extension granted by NASDAQ, and the Company's common stock may then be subject to delisting.

NOTE 5. TRADE RECEIVABLES

Trade receivables consist of amounts generated from product sales and government contracts. Accounts receivable totaled $458,076 and $100,164 as of December 31, 2013 and 2012, respectively. Product revenue for the year ended

December 31, 2013 includes $289,000 of sales to one major customer, representing 26% of total product revenue. Receivables from this major customer were $253,000 at December 31, 2013.

Provisional Indirect Cost Rates - The Company bills the government under cost-based research and development contracts at provisional billing rates which permit the recovery of indirect costs. These rates are subject to audit on an annual basis by the government agencies' cognizant audit agency. The cost audit may result in the negotiation and determination of the final indirect cost rates. In the opinion of management, re-determination of any cost-based contracts will not have a material effect on the Company's financial position or results of operations.

NOTE 6. PROPERTY, PLANT AND EQUIPMENT

The following table summarizes property, plant and equipment as of December 31, 2013 and December 31, 2012:

Table of Contents

	As of December 31,	
	2013	2012
Building	$5,820,509	$5,820,735
Furniture, fixtures, computer hardware and computer software	461,491	426,517
Manufacturing machinery and equipment	32,332,905	32,847,052
Leasehold improvements	—	884,709
Depreciable property, plant and equipment	38,614,905	39,979,013
Less: Accumulated depreciation and amortization	(17,850,688)	(12,725,298)
Net property, plant and equipment	$20,764,217	$27,253,715

The Company analyzes its long-lived assets for impairment, both individually and as a group, whenever events or changes in circumstances indicate that the carrying amount of the assets may not be recoverable. During the quarter ended June 30, 2011, an impairment charge in the amount of approximately $74.5 million was taken against Property, Plant and Equipment. This impairment, combined with a charge of approximately $3.5 million taken against Deposits on manufacturing equipment, resulted in a total write-down of $78.0 million in the quarter ended June 30, 2011. This write-down resulted in net assets of approximately $32.2 million being recorded at fair value as of June 30, 2011. The fair value measurement for these assets relied primarily on Company-specific inputs and the Company's assumptions about the use of the assets, as observable inputs were not available. Accordingly, the Company determined these fair value measurements reside primarily within Level 3 of the fair value hierarchy.

Depreciation expense for the years ended December 31, 2013, 2012 and 2011 was $6,186,889, $6,142,560 and $7,527,150, respectively. Depreciation expense is recorded under "Research, development and manufacturing operations" expense and "Selling, general and administrative" expense in the Condensed Statements of Operations.

The Company incurred and capitalized interest costs related to the manufacturing facility building loan as follows during the years ended December 31, 2013, 2012 and 2011:

	For the years ended December 31,		
	2013	2012	2011
Interest cost incurred	$432,426	$449,302	465,103
Interest cost capitalized	—	(177,309)	(351,632)
Interest expense, net	$432,426	$271,993	$113,471

In December 2012, all of the production equipment to be installed in the manufacturing facility had been delivered and was in service, therefore the Company no longer capitalizes interest related to its manufacturing facility building loan.

NOTE 7. INVENTORIES

Inventories consisted of the following at December 31, 2013 and December 31, 2012:

	As of December 31,	
	2013	2012
Raw materials	$1,190,079	$1,794,224
Work in process	401,274	172,227
Finished goods	296,259	193,102
Total	$1,887,612	$2,159,553

NOTE 8. DEBT

On February 8, 2008, the Company acquired a manufacturing and office facility in Thornton, Colorado, for approximately $5.5 million. The purchase was financed by a promissory note, deed of trust and construction loan agreement (the "Construction Loan") with the Colorado Housing and Finance Authority ("CHFA"), which provided the

Company borrowing availability of up to $7.5 million for the building and building improvements. In 2009, the Construction Loan was converted to a permanent loan pursuant to a Loan Modification Agreement between the Company and CHFA (the “Permanent Loan”). The Permanent Loan,

Table of Contents

collateralized by the building, has an interest rate of 6.6% and the principal will be amortized through its term to January 2028. The Company will incur a prepayment penalty if the Permanent Loan is prepaid prior to December 31, 2015. Further, pursuant to certain covenants in the Permanent Loan, the Company may not, among other things, without CHFA’s prior written consent (which by the terms of the deed of trust is subject to a reasonableness requirement): create or incur additional indebtedness (other than obligations created or incurred in the ordinary course of business); merge or consolidate with any other entity; or make loans or advances to the Company’s officers, shareholders, directors or employees.

As of December 31, 2013, future principal payments on long-term debt are due as follows:

2014	$282,960
2015	302,210
2016	322,771
2017	344,730
2018	368,183
Thereafter	4,729,281
	$6,350,135

NOTE 9. MAKE-WHOLE DIVIDEND LIABILITY

In June 2013, the Company entered into a Series A Preferred Stock Purchase Agreement. Holders of Series A Preferred Stock are entitled to cumulative dividends at a rate of 8.0% per annum, with the dividend rate being indexed to the Company's stock price and subject to adjustment. Conversion or redemption of the Series A Preferred Stock within 4 years of issuance requires the Company pay a make-whole dividend to the holders, whereby dividends for the full four year period are to be paid in cash or common stock (valued at 10% below market price).

In October 2013, the Company entered into a Series B Preferred Stock Purchase Agreement. Holders of Series B Preferred Stock are entitled to cumulative dividends at a rate of 5.75% per annum, with the dividend rate being indexed to the Company's stock price and subject to adjustment. Conversion or redemption of the Series B Preferred Stock within 5 years of issuance requires the Company pay a make-whole dividend to the holders, whereby dividends for the full five year period are to be paid in cash or common stock (valued at 8% below market price, but not to exceed the lowest closing price paid during the applicable measurement period).

The Company concluded the make-whole payments should be characterized as embedded derivatives under ASC 815. See Note 3. Summary of Significant Accounting Policies and Note 10. Stockholders' Equity. With the closing of the Series A and Series B preferred stock transactions, during the year ended December 31, 2013, the Company recorded dividends totaling $3.7 million as "Deemed dividends on Preferred Stock and accretion of warrants" in the Statements of Operations and "Make-whole dividend liability" in the Balance Sheets.

The fair value of these dividend liabilities, which are indexed to the Company's common stock, must be evaluated at each period end. The fair value measurements rely primarily on Company-specific inputs and the Company’s own assumptions. With the absence of observable inputs, the Company determined these recurring fair value measurements reside primarily within Level 3 of the fair value hierarchy. Fair value determination required forecasting stock price volatility, expected average annual return and conversion date. As a result of this analysis, during the year ended December 31, 2013, the Company recorded a net increase in fair value of the liability in the amount of $1.3 million, recorded as "Change in fair value of make-whole dividend liability" in Other Income/(Expense) in the Statements of Operations and in the Statement of Cash Flows.

At December 31, 2013, there were 362,390 shares and 350 shares of Series A and Series B Preferred Shares outstanding, respectively. At December 31, 2013, the Company was entitled to redeem the outstanding Series A preferred shares for $2.9 million, plus a make-whole amount of $1.1 million, payable in cash or common shares. At December 31, 2013, the Company was entitled to redeem the outstanding Series B preferred shares for $3.5 million, plus a make-whole amount of $2.0 million, payable in cash or common shares. The combined fair value of the

make-whole dividend liabilities for the Series A and Series B preferred shares, which approximates cash value, was $3.1 million as of December 31, 2013.

NOTE 10. STOCKHOLDERS' EQUITY
Common Stock

Table of Contents

At December 31, 2013, the Company had 125,000,000 shares of common stock, $0.0001 par value, authorized for issuance. Each share of common stock has the right to one vote. As of December 31, 2013, the Company had 61,748,524 shares of common stock outstanding. The Company has not declared or paid any dividends related to the common stock through December 31, 2013. In January 2014, the authorized shares of common stock was increased to 250,000,000.

Initial Public Offering: The Company completed its initial public offering ("IPO") of 3,000,000 units in 2006. Each unit consisted of one share of common stock, one redeemable Class A warrant and two non-redeemable Class B warrants. The IPO price was $5.50 per unit. The net proceeds of the offering were approximately $14 million.

Class A warrants. In 2007, the Company announced it intended to redeem its outstanding Class A warrants at $0.25 per warrant pursuant to its terms. There were 3,290,894 Class A warrants issued in connection with the Company's IPO. During the exercise period, 3,098,382 Class A warrants (94.1% of the total outstanding) were exercised for an equal number of shares of common stock, and the Company received approximately $20 million in proceeds from the warrant exercises. The Class A warrant exercise period ended July 10, 2011.

Class B warrants. The Class B warrants included in the units became exercisable in August 2006. The exercise price of a Class B public warrant was $11.00. During 2008 and 2007, 98,800 and 11,000 Class B warrants, respectively were exercised resulting in proceeds to the Company of approximately $1.09 million and $121,000 respectively. The Class B warrant exercise period ended July 10, 2011.

IPO warrants. Warrants to purchase 300,000 units at $6.60 were issued to underwriters of the Company's IPO in July 2006 (representative's warrants). A unit consisted of one share of common stock, one Class A redeemable warrant and two Class B non-redeemable warrants. The proceeds from exercises of representative's warrants were approximately $2.0 million in 2007 and $0.5 million in 2008. The representative's warrant exercise period ended July 10, 2011.

Private Placements of Securities: The Company completed a private placement of securities with Norsk Hydro Produksjon AS ("Norsk Hydro") in March 2007. Norsk Hydro purchased 1,600,000 shares of the Company's common stock (representing 23% of the Company's then outstanding common stock post transaction) for net proceeds of approximately $9.2 million.

In August 2007, Norsk Hydro acquired an additional 934,462 shares of the Company's common stock and 1,965,690 Class B warrants through the exercise of an option previously granted to Norsk Hydro and approved by the Company's stockholders. Gross proceeds to the Company were $10.48 million. After acquiring these additional shares, Norsk Hydro again held 23% of the then outstanding common shares. Pursuant to a second option that was approved by Ascent's stockholders in June 2007, beginning December 13, 2007, Norsk Hydro was entitled to purchase additional shares and Class B warrants up to a maximum of 35% of each class of security.

In March 2008, Norsk Hydro acquired an additional 2,341,897 shares of the Company's common stock and 1,689,905 Class B warrants through the exercise of the second option previously granted to Norsk Hydro and approved by Ascent's stockholders in June 2007, resulting in Norsk Hydro ownership of approximately 35% of each class of security. Gross proceeds to the Company were $28.4 million. As a result of the Company's Secondary Public Offering in May 2008, Norsk Hydro's holdings were diluted to approximately 27% of the then outstanding common stock.

In October 2008, Norsk Hydro acquired an additional 2,421,801 shares of the Company's common stock. The purchase resulted in a return to Norsk Hydro's ownership of approximately 35% of the Company's then outstanding common stock. Gross proceeds to the Company from the follow on investment were approximately $15 million.

In September 2009, the Company sold to Norsk Hydro 769,230 restricted shares of the Company's common stock for approximately $5.0 million in a private placement at a per share price equal to $6.50. Norsk Hydro was granted demand and piggy-back registration rights.

In August 2011, the Company completed a strategic alliance with TFG Radiant. As part of this strategic alliance, TFG Radiant acquired 6,400,000 shares of the Company's common stock at a price of $1.15 per share or $7,360,000 in the aggregate. The closing price of the Company's common stock on August 12, 2011 was $0.73. In addition, TFG Radiant received an option to acquire an additional 9,500,000 shares of the Company's common stock at an exercise price of $1.55 per share. The option was approved by the Company's stockholders on October 27, 2011. TFG Radiant may not exercise this option unless, and until, TFG Radiant meets a specified milestone associated with the

construction of the first East Asia FAB. This option expired on February 12, 2014.

In January 2012, TFG Radiant agreed to purchase 8,067,390 shares of the Company's common stock owned by Norsk Hydro for $4 million, or approximately $0.50 per share. The TFG Radiant purchase of these shares closed on March 30, 2012. As of December 31, 2013, TFG Radiant's ownership was approximately 26% of the Company's outstanding Common Stock.

Table of Contents

In April 2013, the Company entered into a Stock Purchase Agreement with an investor to sell an aggregate of 2,500,000 unregistered shares of common stock at a per share price of $0.57. In May 2013, the Company received proceeds of $1,425,000 from this transaction.

Secondary Public Offerings: In May 2008, the Company completed a secondary public offering of 4,370,000 shares of common stock, which included 570,000 shares issued upon the underwriter's exercise of their overallotment in full. The offering price of $14.00 per share resulted in net proceeds of $56.8 million.

In October 2009, the Company completed a secondary offering of 4,615,385 shares of the Company's common stock at a price of $6.50 per share. The net proceeds to the Company were approximately $27.9 million.

In November 2010, the Company completed a secondary offering of 5,250,000 shares of the Company's common stock at a price of $4.15 per share. The net proceeds to the Company were approximately $20.4 million.

In September 2012, the Company entered into an underwriting agreement with Aegis Capital Corp., providing for the sale, in a firm commitment offering, of 9,166,700 shares of the Company's common stock, par value $0.0001 per share, at a price to the public of $1.20 per share. The Offering closed on September 25, 2012. Net proceeds were $10.2 million after deducting the underwriting discount and offering expenses payable by the Company of approximately $837,000.

Other common stock issuances: In February 2011, the Company entered into an At-The-Market Equity Offering Sales Agreement. Under this agreement the Company issued and sold 386,050 shares of its common stock for gross proceeds of $315,270 during 2011. This agreement was terminated on January 4, 2012.

In January 2012, the Company entered into an At-The-Market Equity Offering Sales Agreement under which the Company may issue and sell up to $5,000,000 of shares of its common stock from time to time. Sales of common stock, if any, will be made at market prices by any method deemed to be an "at the market" offering as defined in Rule 415 under the Securities Act, including sales made directly on the NASDAQ stock exchange and any other trading market for the Company's common stock, and sales to or through a market maker other than on an exchange. The aggregate compensation payable to the sales agent shall be equal to 3% of the gross sales price of the shares sold. As of December 31, 2013, 1,972,181 shares had been sold under this facility with net proceeds of $1.9 million. This agreement was terminated on October 29, 2013.

In January 2013, the Company retained a consulting firm to provide certain consulting services relating to the retail distribution of the Company's consumer products. In exchange for the consulting services, the Company issued 240,000 unregistered shares of Common Stock to the consulting firm. Under the terms of the consulting agreement, the Company will hold the shares in escrow until January 2014. With this issuance, half of the shares vested immediately, and the remaining shares vested in January 2014.

In December 2011, the Company filed a "shelf" Registration Statement on Form S-3 with the SEC. With the shelf registration, the Company may from time to time sell common stock, preferred stock, warrants or some combination in one or more offerings for up to $25.0 million. The registration became effective February 14, 2012. This shelf registration replaces the Company's prior shelf registration statement which, in accordance with SEC rules, expired in early 2012. As of December 31, 2013, approximately $2.0 million was unused on the shelf registration.

Preferred Stock

At December 31, 2013, the Company's had 25,000,000 shares of preferred stock, $0.0001 par value, authorized for issuance. Preferred stock may be issued in classes or series. Designations, powers, preferences, rights, qualifications, limitations and restrictions are determined by the Company's Board of Directors. 750,000 shares have been designated as Series A preferred stock and 2,000 shares have been designated for Series B-1 and B-2 preferred stock. As of December 31, 2013, the Company had 362,390 shares of Series A preferred stock, 350 shares of Series B-1 preferred stock and no shares of Series B-2 preferred stock, outstanding. The Company has no declared unpaid dividends related to the preferred stock as of December 31, 2013.

Series A preferred stock: In June 2013, the Company entered into a Securities Purchase Agreement with an investor to sell an aggregate of 750,000 shares of Series A Preferred Stock at a price of $8.00 per share, resulting in gross proceeds of $6,000,000. This purchase agreement included warrants to purchase up to 2,625,000 shares of common stock of the Company. The transfer of cash and securities took place incrementally, the first closing occurring on June 17, 2013 with the transfer of 125,000 shares of Series A preferred stock and a warrant to purchase 437,500 shares of

common stock for $1,000,000. The final closing took place in August 2013, with the transfer of 625,000 shares of Series A preferred stock and a warrant to purchase 2,187,500 shares of common stock for $5,000,000.
Holders of Series A preferred stock are entitled to cumulative dividends at a rate of 8.0% per annum when and if declared by the Board of Directors in its sole discretion. The dividends may be paid in cash or in the form of common stock (valued

Table of Contents

at 10% below market price, but not to exceed the lowest closing price during the applicable measurement period), at the discretion of the Board of Directors. The dividend rate on the Series A preferred stock is indexed to the Company's stock price and subject to adjustment. In addition, the Series A preferred stock contains a make-whole provision whereby, conversion or redemption of the preferred stock within 4 years of issuance will require dividends for the full four year period to be paid by the Company in cash or common stock (valued at 10% below market price, but not to exceed the lowest closing price during the applicable measurement period).

The Series A preferred stock may be converted into shares of common stock at the option of the Company if the closing price of the common stock exceeds $1.60, as adjusted, for 20 consecutive trading days, or by the holder at any time. The Company has the right to redeem the Series A preferred stock at a price of $8.00 per share, plus any accrued and unpaid dividends, plus the make-whole amount (if applicable). At December 31, 2013, the preferred shares were not eligible for conversion to common shares, at the option of the Company. The holder of the preferred shares may convert to common shares at any time, at no cost, at a ratio of 1 preferred share into10 common shares (subject to standard ratable anti-dilution adjustments). Upon any conversion (whether at the option of the Company or the holder), the holder is entitled to receive any accrued but unpaid dividends and also any make-whole amount (if applicable). See Note 9. Make-whole dividend liability.

During the twelve months ended December 31, 2013, the holder of the Series A preferred stock converted 387,610 preferred shares into 3,876,100 shares of common stock. As a result of these conversions, the Company paid make-whole dividends in the amount of 996,637 shares of common stock in lieu of a cash payment of $752,000.

Except as otherwise required by law (or with respect to approval of certain actions), the Series A preferred stock shall have no voting rights. Upon any liquidation, dissolution or winding up of the Company, after payment or provision for payment of debts and other liabilities of the Company, the holders of Series A preferred stock shall be entitled to receive, pari passu with any distribution to the holders of common stock of the Company, an amount equal to $8.00 per share of Series A preferred stock plus any accrued and unpaid dividends.

The warrants offered as part of the Securities Purchase Agreement have a three year term and require payment of an exercise price of $0.90 per common share to the Company.

The Securities Purchase Agreement for the Series A preferred stock required the registration statement, filed on August 16, 2013, must be declared effective within 90 days of the filing date. If the registration statement was not declared effective by this date, damages of 1% of the total investment amount, or $60,000, plus interest, would have been owed by the Company to the Holder for each month until registration statement effectiveness is reached or the investment amount is repaid in full. The registration statement became effective on August 30, 2013, therefore any potential registration rights liability owed to the Holder by the Company was eliminated as of September 30, 2013.

Series B preferred stock: In October 2013, the Company entered into a Securities Purchase Agreement with an investor to offer up to 1,000 shares of Series B-1 and Series B-2 preferred stock at a price of $10,000 per share, and gross proceeds of up to $10,000,000. The Company offered the Series B preferred stock in two tranches. The first tranche closed on November 1, 2013, with the Company selling 500 shares of Series B-1 preferred stock in exchange for gross proceeds of $5,000,000. On January 20, 2014, at a special meeting of the stockholder's, the Company obtained stockholder approval for the offering. Delivery of the second tranche of $5,000,000 in exchange for 500 shares of Series B-1 preferred shares occurred on February 7, 2014. With the closing of both tranches resulting in the issuance of Series B-1 preferred shares, the Company will not offer Series B-2 preferred shares.

Holders of Series B preferred stock are entitled to cumulative dividends at a rate of 5.75% per annum when, and if, declared by the Board of Directors in its sole discretion. The dividends may be paid in cash or in the form of common stock (valued at 8% below market price, but not to exceed the lowest closing price during the applicable measurement period), at the discretion of the Board of Directors. The dividend rate on the Series B preferred stock is indexed to the Company's stock price and subject to adjustment. In addition, the Series B preferred stock contains an embedded dividend provision whereby, conversion or redemption of the preferred stock within 5 years of issuance will require dividends for the full five year period to be paid by the Company in cash or common stock (valued at 8% below market price, but not to exceed the lowest closing price during the applicable measurement period).

The Series B preferred stock may be converted into shares of common stock at the option of the Company if the closing price of the common stock exceeds $2.00, as adjusted, for 20 consecutive trading days, or by the holder at any time. The Company has the right to redeem the Series B preferred stock at a price of $10,000 per share, plus any accrued and unpaid dividends, plus the embedded dividend liability amount (if applicable). The holder of the Series B-1 preferred stock may convert to common shares at any time, at no cost, at a conversion price of $1.15 and a ratio of 1 preferred share into 8,696 common shares. Conversions by the holder are subject to standard ratable anti-dilution adjustments. Upon any

Table of Contents

conversion (whether at the option of the Company or the holder), the holder is entitled to receive any accrued but unpaid dividends and also any embedded dividend amount (if applicable). See Note 9. Make-whole dividend liability. During the twelve months ended December 31, 2013, the holder of the Series B preferred stock converted 150 preferred shares into 1,304,347 shares of common stock. As a result of these conversions, the Company paid a make-whole dividends in the amount of 1,172,126 shares of common stock in lieu of a cash payment of $788,000.

Except as otherwise required by law (or with respect to approval of certain actions), the Series B preferred stock shall have no voting rights. Upon any liquidation, dissolution or winding up of the Company, holders of Series B preferred stock will be entitled to be paid out of the Company's assets, on a parity with holders of the Company's common stock and the Company's Series A preferred stock, an amount equal to $10,000 per share plus any accrued but unpaid dividends thereon.

NOTE 11. EQUITY PLANS AND SHARE-BASED COMPENSATION

Stock Option Plan: The Company’s 2005 Stock Option Plan, as amended (the “Stock Option Plan”) provides for the grant of incentive or non-statutory stock options to the Company’s employees, directors and consultants. Upon recommendation of the Board of Directors, the stockholders approved increases in the total shares of common stock reserved for issuance under the Stock Option Plan at various times from 1,000,000 to 3,700,000 currently.

Restricted Stock Plan: The Company’s 2008 Restricted Stock Plan, as amended (the “Restricted Stock Plan”) was adopted by the Board of Directors and was approved by the stockholders on July 1, 2008. The Restricted Stock Plan initially reserved up to 750,000 shares of the Company’s common stock for restricted stock awards and restricted stock units to eligible employees, directors and consultants of the Company. Upon recommendation of the Board of Directors, the stockholders approved an increase in the total shares of common stock reserved for issuance under the Restricted Stock Plan from 750,000 to 2,550,000 shares.

The Stock Option Plan and the Restricted Stock Plan are administered by the Compensation Committee of the Board of Directors, which determines the terms of the option and share awards, including the exercise price, expiration date, vesting schedule and number of shares. The term of any incentive stock option granted under the Stock Option Plan may not exceed ten years, or 5 years for options granted to an optionee owning more than 10% of the Company’s voting stock. The exercise price of an incentive stock option granted under the Option Plan must be equal to or greater than the fair market value of the shares of the Company’s common stock on the date the option is granted. An incentive stock option granted to an optionee owning more than 10% of the Company’s voting stock must have an exercise price equal to or greater than 110% of the fair market value of the Company’s common stock on the date the option is granted. The exercise price of a non-statutory option granted under the Option Plan must be equal to or greater than 85% of the fair market value of the shares of the Company’s common stock on the date the option is granted.

Grants Outside Existing Equity Plans: Prior to the adoption of the Restricted Stock Plan, the Board of Directors granted 40,000 restricted stock awards in connection with an executive employment agreement. In July 2009, the Board of Directors granted an inducement award (as defined in NASDAQ Rule 5635(c) (4)) made outside of the existing Stock Option Plan for 200,000 stock options.

Share-Based Compensation: The Company measures share-based compensation cost at the grant date based on the fair value of the award and recognizes this cost as an expense over the grant recipients’ requisite service periods for all awards made to employees, officers, directors and consultants.

The share-based compensation expense recognized in the Condensed Statements of Operations was as follows:

	For the years ended December 31,		
	2013	2012	2011
Share-based compensation cost included in:			
Research, development and manufacturing operations	$228,120	$304,013	$302,101
Selling, general and administrative	393,385	620,302	1,270,506
Total share-based compensation cost	$621,505	$924,315	$1,572,607

The following table presents share-based compensation expense by type:

Table of Contents

	For the years ended December 31,		
	2013	2012	2011
Type of Award:			
Stock Options	$311,965	$443,103	$768,703
Restricted Stock Units and Awards	309,540	481,212	803,904
Total share-based compensation cost	$621,505	$924,315	$1,572,607

Stock Options: The Company recognized share-based compensation expense for stock options of $312,000 to officers, directors and employees for the year ended December 31, 2013 related to stock option awards ultimately expected to vest and reduced for estimated forfeitures. The weighted average estimated fair value of employee stock options granted for the years ended December 31, 2013, 2012 and 2011 was $0.49, $0.60 and $1.49 per share, respectively. Fair value was calculated using the Black-Scholes Model with the following assumptions:

	For the years ended December 31,		
	2013	2012	2011
Expected volatility	97.3 %	101.3 %	97.9 %
Risk free interest rate	0.9 %	0.8 %	2.1 %
Expected dividends	—	—	—
Expected life (in years)	5.2	5.2	6.3

Expected volatility is based on the historical volatility of the Company’s stock. The risk-free rate of return is based on the yield of U.S. Treasury bonds with a maturity equal to the expected term of the award. Historical data is used to estimate forfeitures within the Company’s valuation model. The Company’s expected life of stock option awards is derived from historical experience and represents the period of time that awards are expected to be outstanding.
As of December 31, 2013, total compensation cost related to non-vested stock options not yet recognized was $304,000 which is expected to be recognized over a weighted average period of approximately 1.4 years. As of December 31, 2013, 1,312,028 shares were vested or expected to vest in the future at a weighted average exercise price of $1.95. As of December 31, 2013, 1,432,967 shares remained available for future grants under the Option Plan.
The following table summarizes stock option activity for grants made within the Stock Option Plan and outside the plan (shares in thousands):

	Stock Option Shares	Stock Options Weighted Average Exercise Price	Weighted Average Remaining Contractual Life in Years	Aggregate Intrinsic Value
Outstanding at January 31, 2011	1,516	$5.14	8.32	$527,463
Granted	1,295	1.88		
Exercised	(57)	(0.10)		$149,007
Forfeited	(1,308)	4.96		
Outstanding at December 31, 2011	1,446	$2.58	8.77	$4,437
Granted	45	0.80		
Exercised	(14)	0.68		$14,081
Forfeited	(257)	2.54		
Outstanding at December 31, 2012	1,220	$2.54	7.79	$8,057
Granted	785	$0.66		
Exercised	(48)	$0.68		$5,400
Forfeited	(409)	$2.04		

Outstanding at December 31, 2013	1,548	$1.78	7.81	$51,160
Exercisable at December 31, 2013	596	$3.21	6.39	$12,742

Table of Contents

Restricted Stock: In addition to the stock options discussed above, the Company recognized share-based compensation expense related to restricted stock grants of $310,000 for the year ended December 31, 2013. The weighted average estimated fair value of restricted stock grants for the years ended December 31, 2013, 2012 and 2011 was $0.62, $0.57 and $3.19, respectively.

Total unrecognized share-based compensation expense from unvested restricted stock as of December 31, 2013 was $14,000 which is expected to be recognized over a weighted average period of approximately 0.5 years. As of December 31, 2013, 14,745 shares were expected to vest in the future. As of December 31, 2013, 756,017 shares remained available for future grants under the Restricted Stock Plan.

The following table summarizes non-vested restricted stock and the related activity as of December 31, 2013 and for the years ended December 31, 2013, 2012 and 2011 (shares in thousands):

	Shares	Weighted Average Grant-Date Fair-Value
Non-vested at January 1, 2011	246	$5.48
Granted	488	$3.19
Vested	(212)	
Forfeited	(281)	
Non-vested at December 31, 2011	241	$3.09
Granted	658	0.57
Vested	(646)	
Forfeited	(205)	
Non-vested at December 31, 2012	48	$3.47
Granted	427	$0.62
Vested	(453)	
Forfeited	(7)	
Non-vested at December 31, 2013	15	$3.52

NOTE 12. INCOME TAXES

The Company records income taxes using the liability method. Under this method, deferred tax assets and liabilities are computed for the expected future impact of temporary differences between the financial statement and income tax bases of assets and liabilities using current income tax rates and for the expected future tax benefit to be derived from tax loss and tax credit carryforwards. ASC 740 provides detailed guidance for the financial statement recognition, measurement and disclosure of uncertain tax positions recognized in the financial statements. Tax positions must meet a “more-likely-than-not” recognition threshold before a benefit is recognized in the financial statements.

At December 31, 2013, the Company had $161,011,000 of cumulative net operating loss carryforwards for federal income tax purposes that were available to offset future taxable income through the year 2033. Under the Internal Revenue Code, the future utilization of net operating losses may be limited in certain circumstances where there is a significant ownership change. The Company prepared an analysis for the year ended December 31, 2013 and determined that a significant change in ownership has occurred as a result of the cumulative effect of the sales of common stock through its offerings. Such change limited the Company's utilizable net operating loss carryforwards to $73,969,000 for the year ended December 31, 2013.

Deferred income taxes reflect an estimate of the cumulative temporary differences recognized for financial reporting purposes from that recognized for income tax reporting purposes. At December 31, 2013 and 2012, the components of these temporary differences and the deferred tax asset were as follows:

Table of Contents

	As of December 31	
	2013	2012
Deferred Tax Asset		
Current:		
Accrued Expenses	$705,000	$229,000
Inventory Allowance	427,000	355,000
Total Current	1,132,000	584,000
Non-current:		
Stock Based Compensation-Stock Options and Restricted Stock	1,332,000	1,209,000
Tax effect of NOL carryforward	27,027,000	14,359,000
Depreciation	25,336,000	29,019,000
Amortization	(334,000)	(190,000)
Warranty reserve	18,000	14,000
Total Non-current	53,379,000	44,411,000
Net deferred tax asset	54,511,000	44,995,000
Less valuation allowance	(54,511,000)	(44,995,000)
Net deferred tax asset	$—	$—

In assessing the realizability of deferred tax assets, management considers whether it is more likely than not that some portion or all of the deferred tax assets will be realized. The ultimate realization of deferred tax assets is dependent upon the generation of future taxable income during the periods in which those temporary differences become deductible. Management considers the scheduled reversal of deferred tax liabilities, projected future taxable income and tax planning strategies in making this assessment. Based upon the level of historical losses and projections of future taxable income over the periods in which the deferred tax assets are deductible, management believes it is not "more-likely-than-not" that the Company will realize the benefits of these deductible differences at December 31, 2013. The Company’s deferred tax valuation allowance of $54,511,000 reflected above is an increase of $9,516,000 from the valuation allowance reflected as of December 31, 2012 of $44,995,000, resulting from the ownership change net operating loss limitation.

As of December 31, 2013, the Company has not recorded a liability for uncertain tax positions. The Company recognizes interest and penalties related to uncertain tax positions in income tax (benefit)/expense. No interest and penalties related to uncertain tax positions were accrued at December 31, 2013.

The Company’s effective tax rate for the years ended December 31, 2013 and 2012 differs from the statutory rate due to the following (expressed as a percentage of pre-tax income):

	2013	2012
Federal statutory rate	35%	35%
State statutory rate	3%	3%
Permanent tax differences	—%	—%
Loss on revaluation	(2)%	—%
Other	(5)%	—%
Limitation on NOL usage due to ownership change	—%	(115)%
Increase in valuation allowance	(31)%	77%
	—%	—%

NOTE 13. RELATED PARTY TRANSACTIONS

TFG Radiant owns approximately 26% of the Company's outstanding common stock as of December 31, 2013. In February 2012, the Company announced the appointment of Victor Lee as President and Chief Executive Officer. Mr. Lee had served on the Company's Board of Directors since November 2011 and is currently the managing director of Tertius Financial Group Pte Ltd, the joint venture partner with Radiant Group in TFG Radiant. In April 2012, the Company appointed the Chairman of TFG Radiant, Mr. Winston Xu (aka Xu Biao), as a member of its Board of Directors.

Table of Contents

In June 2012, the Company entered into a supply agreement and a contract manufacturing agreement with TFG Radiant. Under the terms of the contract manufacturing agreement TFG Radiant will oversee certain aspects of the contract manufacturing process related to the Company's EnerPlex™ line of consumer products. The Company will compensate TFG Radiant for acting as general contractor in the contract manufacturing process. Under the supply agreement TFG Radiant intends to distribute the Company's consumer products in Asia. In December 2012, the Company entered into a consulting agreement with TGF Radiant for product design, product development and manufacturing coordination activities provided by TFG Radiant to the Company in connection with the Company's line of consumer electronics products. The services agreement has a one year term initially, and the services agreement may be terminated by either party upon 10 days prior written notice.

During the year ended December 31, 2013, the Company made disbursements to TFG Radiant in the amount of $1,352,000. Included within these disbursements is $800,000 for consulting fees and $552,000 for finished goods received and deposits for work-in-process. During the years ended December 31, 2013 and 2012, the Company recognized revenue in the amount of $143,000 and $405,000, respectively, for products sold to TFG Radiant under the supply agreement. As of December 31, 2013, the Company had $21,000 in receivables and deposits with TFG Radiant.

NOTE 14. COMMITMENTS AND CONTINGENCIES

On October 21, 2011, the Company was notified that a complaint claiming $3.0 million for an investment banking fee (the “Lawsuit”) was filed by Jefferies & Company, Inc. (“Jefferies”) against the Company in New York State Supreme Court in the County of New York. In December 2010, Ascent and Jefferies entered into an engagement agreement (the “Fee Agreement”) pursuant to which Jefferies was hired to act as the Company's financial advisor in relation to certain potential transactions. In addition, should it prevail at trial, Jefferies would be able to claim an award for attorney's fees and prejudgment interest in the approximate amount of $1.2 million.

To date, Ascent has paid Jefferies the fees it believes are owed under the Fee Agreement, which are a $100,000 retainer and approximately $49,000 of out-of-pocket expenses. The discovery process in the case began in early 2012 and is now complete. Jefferies' motion for summary judgment has been denied. A non-jury trial has been set for April 16, 2014.

In March 2014, the parties engaged in settlement discussions and reached an agreement in principle to settle the Lawsuit. The term sheet for this proposed settlement is being prepared as of the date of this filing.

The Company records a liability in its financial statements for costs related to claims, including settlements and judgments, where the Company has assessed that a loss is probable and an amount can be reasonably estimated. The Company has accrued $1.7 million as of December 31, 2013 based on its' assessment of the likelihood of the contingent loss and the range of potential loss.

NOTE 15. RETIREMENT PLAN

On July 1, 2006, the Company adopted a qualified 401(k) plan which provides retirement benefits for all of its eligible employees. Under the plan, employees become eligible to participate at the first entry date, provided they are at least 21 years of age. The participants may elect through salary reduction to contribute up to ceilings established in the Internal Revenue Code. The Company will match 100% of the first six percent of employee contributions. In addition, the Company may make discretionary contributions to the Plan as determined by the Board of Directors. Employees are immediately vested in all salary reduction contributions. Rights to benefits provided by the Company’s discretionary and matching contributions vest 100% after the first year of service for all employees hired before January 1, 2010. For employees hired after December 31, 2009, matching

Table of Contents

contributions vest over a three-year period, one-third per year. Payments for 401(k) matching totaled $253,997, $143,159 and $257,823 for the years ended December 31, 2013, 2012 and 2011 respectively. Payments for 401(k) matching are recorded under “Research, development and manufacturing operations" expense and “Selling, general and administrative" expense in the Statements of Operations.

NOTE 16. JOINT VENTURE

On December 28, 2013, the Company entered into a definitive agreement for the establishment of a joint venture with the Government of the Municipal City of Suqian in Jiangsu Province, China (“Suqian”).

The agreement covers a multi-faceted, three-phase project. Completion of all three phases would involve an anticipated investment of up to $500 million over 6 years, comprised of equipment, intellectual property and cash funded by Suqian, the Company, and other supporting investors to be brought in by the Company.

In the initial phase of the project, the Company and Suqian will form a joint venture entity (“JV”) in which Suqian will inject approximately $4.8 million in cash and have majority interest of 75%. The Company will inject approximately $1.6 million in cash and hold a minority interest of 25%. Later in 2014, Suqian will further inject the balance of the committed $32.5 million while the Company will contribute its proprietary technology and intellectual property, as well as certain equipment from its Colorado facility, thereby increasing the Company's shareholdings progressively up to an 80% ownership.

The JV will build a factory to manufacture the Company's proprietary photovoltaic modules. The Company is committed to purchase this factory within the first 5 years at the initial construction cost, and will also purchase Suqian's ownership interest in the JV at a cost of 1.5 times Suqian's cash investment.

The implementation of the agreement, including the formation of the JV entity, will be subject to a number of contractual conditions and governmental approvals. Such conditions and approvals must be obtained in the future in order for the Suqian factory to be built and become operational.

In December 2013, the Company established a wholly owned legal entity in Singapore (Ascent Solar (Asia) PTE. LTD. "Ascent Asia"). Ascent Asia was established initially to manage the Company's contract manufacturing partners in Asia. In the longer term, this entity will serve as the Company's sales headquarters in Asia, in addition to providing management of regional warehousing operations. Any activity for Ascent Asia will be consolidated into the Company's Balance Sheets, Statements of Operations, Statements of Stockholders' Equity and Statements of Cash Flows.

NOTE 17. SUBSEQUENT EVENT

On February 7, 2014, the Company closed on the issuance of 500 additional shares of Series B-1 Preferred Stock at a purchase price for each share of Series B-1 Preferred Stock of $10,000 per share. The closing resulted in gross proceeds to the Company of $5,000,000.

This transaction was the second tranche closing contemplated by the Series B Preferred Stock Purchase Agreement dated October 28, 2013. The first tranche closing, which occurred on November 1, 2013, also resulted in the Company issuing 500 shares of Series B-1 Preferred Stock and the Company receiving gross proceeds of $5,000,000.

The terms of the Series B-1 Preferred Stock issued in the first and second tranche closings are the same. See Note 10. Stockholders' Equity.

The Series B-1 Preferred Stock was offered and sold pursuant to a prospectus supplement filed on October 30, 2013 with the Securities and Exchange Commission in connection with the Company’s shelf registration statement on Form S-3 (File No. 333-178821), which became effective on February 14, 2012.

NOTE 18. SELECTED QUARTERLY FINANCIAL DATA (unaudited)

The following table presents selected unaudited Statements of Operations and Balance Sheet information for each of the quarters in the years ended December 31, 2013 and 2012 (in thousands, except per share data):

Table of Contents

Selected Statements of Operations information:

	For the Quarter Ended			
Year Ended December 31, 2013	December 31	September 30	June 30	March 31
Revenue	$582	$275	$225	$235
Research, Development and Manufacturing Operations Expense	5,096	5,336	5,590	5,320
Selling, General and Administrative Expense	3,153	1,385	1,611	1,243
Impairment Loss	822	—	—	—
Loss from Operations	(8,490)	(6,445)	(6,976)	(6,328)
Net Loss applicable to common stockholders	(11,816)	(10,136)	(7,680)	(6,434)
Basic and diluted loss per share	$(0.20)	$(0.19)	$(0.15)	$(0.13)

	For the Quarter Ended			
Year Ended December 31, 2013	December 31	September 30	June 30	March 31
Current Assets	$6,842	$6,843	$6,892	$10,317
Total Assets	28,539	30,851	32,322	36,843
Current Liabilities	5,672	4,225	2,835	2,527
Working Capital	1,170	2,618	4,057	7,790
Long-Term Obligations	7,433	6,188	6,252	6,323
Stockholders' Equity	15,434	20,438	23,235	27,993

	For the Quarter Ended			
Year Ended December 31, 2012	December 31	September 30	June 30	March 31
Revenue	$45	$556	$155	$441
Research, Development and Manufacturing Operations Expense	5,778	5,730	4,830	4,390
Selling, General and Administrative Expense	1,140	1,188	1,186	1,494
Impairment Loss	3,402	—	—	—
Loss from Operations	(10,275)	(6,362)	(5,862)	(5,443)
Net Loss applicable to common stockholders	(10,954)	(6,398)	(5,906)	(5,511)
Basic and diluted loss per share	$(0.21)	$(0.15)	$(0.14)	$(0.14)

	For the Quarter Ended			
Year Ended December 31, 2012	December 31	September 30	June 30	March 31
Current Assets	$15,713	$22,176	$16,411	$22,294
Total Assets	43,524	54,569	49,696	55,906
Current Liabilities	2,909	3,084	2,811	3,253
Working Capital	12,804	19,092	13,601	19,041
Long-Term Obligations	6,388	6,456	6,511	6,577
Stockholders' Equity	34,227	45,029	40,374	46,076

Table of Contents

INDEX TO EXHIBITS

Set forth below is a list of exhibits that are being filed or incorporated by reference into this Annual Report on Form 10-K:

Exhibit No.	Description
3.1	Amended and Restated Certificate of Incorporation (incorporated by reference to Exhibit 3.2 to our Registration Statement on Form SB-2 filed on January 23, 2006 (Reg. No. 333-131216))
3.2	Certificate of Amendment to the Amended and Restated Certificate of Incorporation (incorporated by reference to Exhibit 3.1 to our Quarterly Report on Form 10-Q for the quarter ended September 30, 2011)
3.3	Certificate of Amendment dated February 7, 2014 to the Amended and Restated Certificate of Incorporation (incorporated by reference to Exhibit 3.1 to our Current Report on Form 8-K filed February 11, 2014)
3.4	Second Amended and Restated Bylaws (incorporated by reference to Exhibit 3.2 to our Current Report on Form 8-K filed on February 17, 2009)
3.5	First Amendment to Second Amended and Restated Bylaws (incorporated by reference to Exhibit 3.3 to our Quarterly Report on Form 10-Q for the quarter ended September 30, 2009)
3.6	Second Amendment to Second Amended and Restated Bylaws (incorporated by reference to Exhibit 3.1 to our Current Report on Form 8-K filed January 25, 2013)
4.1	Form of Common Stock Certificate (incorporated by reference to Exhibit 4.1 to our Registration Statement on Form SB-2 filed on January 23, 2006 (Reg. No. 333-131216))
4.2	Certificate of Designations of Series A Preferred Stock (filed as Exhibit 4.2 to our Registration Statement on Form S-3 filed July 1, 2013 (Reg. No. 333-189739)).
4.3	Form of Warrant (filed as Exhibit 4.3 to our Registration Statement on Form S-3 filed July 1, 2013 (Reg. No. 333-189739)).
4.4	Certificate of Designations of Series B-1 and B-2 Preferred Stock (incorporated by reference to Exhibit 3.1 to our Current Report on Form 8-K filed October 30, 2013)
10.1	Ascent Solar Technologies, Inc. Second Amended and Restated 2008 Restricted Stock Plan (including Form of Restricted Stock Award Agreement and Form of Restricted Stock Unit Agreement) (incorporated by reference to Exhibit 10.2 to our Current Report on Form 8-K filed on June 17, 2010)†
10.2	Ascent Solar Technologies, Inc. Fourth Amended and Restated 2005 Stock Option Plan (incorporated by reference to Exhibit 10.1 to our Current Report on Form 8-K filed on June 17, 2010)†
10.3	

	Securities Purchase Agreement, dated January 17, 2006, between the Company and ITN Energy Systems, Inc. (incorporated by reference to Exhibit 10.1 to our Registration Statement on Form SB-2 filed on January 23, 2006 (Reg. No. 333-131216))[CTR]
10.4	Invention and Trade Secret Assignment Agreement, dated January 17, 2006, between the Company and ITN Energy Systems, Inc. (incorporated by reference to Exhibit 10.2 to our Registration Statement on Form SB-2 filed on January 23, 2006 (Reg. No. 333-131216))[CTR]
10.5	Patent Application Assignment Agreement, dated January 17, 2006, between the Company and ITN Energy Systems, Inc. (incorporated by reference to Exhibit 10.3 to our Registration Statement on Form SB-2 filed on January 23, 2006 (Reg. No. 333-131216))
10.6	License Agreement, dated January 17, 2006, between the Company and ITN Energy Systems, Inc. (incorporated by reference to Exhibit 10.4 to our Registration Statement on Form SB-2 filed on January 23, 2006 (Reg. No. 333-131216))[CTR]
10.7	Service Center Agreement, dated January 17, 2006, between the Company and ITN Energy Systems, Inc., as amended (incorporated by reference to Exhibit 10.6 to our Registration Statement on Form SB-2 filed on January 23, 2006 (Reg. No. 333-131216))
10.8	Administrative Services Agreement, dated January 17, 2006, between the Company and ITN Energy Systems, Inc., as amended (incorporated by reference to Exhibit 10.8 to our Registration Statement on Form SB-2 filed on January 23, 2006 (Reg. No. 333-131216))
10.9	Letter Agreement, dated November 23, 2005, among the Company, ITN Energy Systems, Inc. and the University of Delaware (incorporated by reference to Exhibit 10.16 to our Registration Statement on Form SB-2/A filed on May 26, 2006 (Reg. No. 333-131216))

Table of Contents

Exhibit No.	Description
10.10	License Agreement, dated November 21, 2006, between the Company and UD Technology Corporation (incorporated by reference to Exhibit 10.1 to our Current Report on Form 8-K filed on November 29, 2006)[CTR]
10.11	Novation Agreement, dated January 1, 2007, among the Company, ITN Energy Systems, Inc. and the United States Government (incorporated by reference to Exhibit 10.23 to our Annual Report on Form 10-KSB for the year ended December 31, 2006)
10.12	Construction Loan Agreement, dated February 8, 2008, between the Company and the Colorado Housing and Finance Authority (incorporated by reference to Exhibit 10.37 to our Annual Report on Form 10-K for the year ended December 31, 2007)
10.13	Promissory Note, dated February 8, 2008, issued to the Colorado Housing and Finance Authority (incorporated by reference to Exhibit 10.38 to our Annual Report on Form 10-K for the year ended December 31, 2007)
10.14	Loan Modification Agreement, dated January 29, 2009, between the Company and the Colorado Housing and Finance Authority (incorporated by reference to Exhibit 10.52 to our Annual Report on Form 10-K for the year ended December 31, 2008)
10.15	Cooperation Agreement, dated December 18, 2007, between the Company and Norsk Hydro Produksjon AS (incorporated by reference to Exhibit 10.1 to our Current Report on Form 8-K filed on December 19, 2007)
10.16	Equipment Purchase Agreement, dated January 7, 2010, between the Company and ITN Energy Systems, Inc. (incorporated by reference to Exhibit 10.46 to our Annual Report on Form 10-K for the year ended December 31, 2009)
10.17	Securities Purchase Agreement dated as of August 12, 2011 between TFG Radiant Investment Group Ltd. and the Company (incorporated by reference to Exhibit 99.1 to our Current Report on Form 8-K filed on August 15, 2011)
10.18	Stockholders Agreement dated as of August 12, 2011 between TFG Radiant Investment Group Ltd. and the Company (incorporated by reference to Exhibit 99.2 to our Current Report on Form 8-K filed on August 15, 2011)
10.19	Registration Rights Agreement dated as of August 12, 2011 between TFG Radiant Investment Group Ltd. and the Company (incorporated by reference to Exhibit 99.3 to our Current Report on Form 8-K filed on August 15, 2011)
10.20	Voting Agreement dated as of August 12, 2011 between TFG Radiant Investment Group Ltd. and Norsk Hydro Produksjon AS (incorporated by reference to Exhibit 99.4 to our Current Report on Form 8-K filed on August 15, 2011)
10.21	Joint Development Agreement dated as of August 12, 2011 between TFG Radiant New-Energy Group Ltd. and the Company (incorporated by reference to Exhibit 10.5 to our Quarterly Report on Form 10-Q for the quarter ended September 30, 2011)[CTR]

10.22	At the Market Offering Sales Agreement dated as of January 5, 2012 between JonesTrading Institutional Services LLC and the Company (incorporated by reference to Exhibit 99.1 to our Current Report on Form 8-K filed on January 5, 2012)
10.23	Amended and Restated Stockholders Agreement dated as of December 30, 2011 between TFG Radiant Investment Group Ltd. and the Company (incorporated by reference to Exhibit 99.2 to our Current Report on Form 8-K filed on January 5, 2012)
10.24	Amended and Restated Registration Rights Agreement dated as of December 30, 2011 between TFG Radiant Investment Group Ltd. and the Company (incorporated by reference to Exhibit 99.3 to our Current Report on Form 8-K filed on January 5, 2012)
10.25	Services Agreement dated December 10, 2012 between the Company and TFG Radiant (incorporated by reference to Exhibit 99.1 to our Current Report on Form 8-K filed December 14, 2012)

Table of Contents

Exhibit No.	Description
10.26	Stock Purchase Agreement, dated April 26, 2013, between the Company and Foo Joo Loong (filed as Exhibit 10.1 to our Registration Statement on Form S-3 filed July 1, 2013 (Reg. No. 333-189739)).
10.27	Securities Purchase Agreement, dated June 17, 2013, between the Company and Seng Wei Seow (filed as Exhibit 10.2 to our Registration Statement on Form S-3 filed July 1, 2013 (Reg. No. 333-189739)).
10.28	Registration Rights Agreement dated June 17, 2013 between the Company and Seng Wei Seow (filed as exhibit 10.2 to our Current Report on Form 8-K filed June 21, 2013).
10.29	First Amendment dated August 7, 2013 to Securities Purchase Agreement and Registration Rights Agreement (incorporated by reference to Exhibit 10.1 to our Current Report on Form 8-K filed on August 7, 2013)
10.30	Second Amendment dated August 13, 2013 to Securities Purchase Agreement (incorporated by reference to Exhibit 10.1 to our Current Report on Form 8-K filed on August 15, 2013)
10.31	Framework Agreement, dated July 2, 2013, between the Company and the Government of the Municipal City of Suqian in Jiangsu Province, China (incorporated by reference to Exhibit 10.5 to our Registration Statement on Form S-3 filed August 29, 2013 (Reg. No. 333-190701), as amended)
10.32	Stock Purchase Agreement, dated October 28, 2013 between the Company and Ironridge Technology Co., a division of Ironridge Global IV, Ltd. (incorporated by reference to Exhibit 10.1 to our Current Report on Form 8-K filed October 30, 2013)
10.33	Industrial Project Entry and Joint Venture Construction Contract by and between the Registrant and Suqian Economic Development Company, Ltd. dated December 28, 2013*

Table of Contents

Exhibit No.	Description
23.1	Consent of Hein & Associates LLP*
31.1	Chief Executive Officer Certification pursuant to section 302 of the Sarbanes-Oxley Act of 2002*
31.2	Chief Financial Officer Certification pursuant to section 302 of the Sarbanes-Oxley Act of 2002*
32.1	Chief Executive Officer Certification pursuant to section 906 of the Sarbanes-Oxley Act of 2002*
32.2	Chief Financial Officer Certification pursuant to section 906 of the Sarbanes-Oxley Act of 2002*

*	Filed herewith
CTR	Portions of this exhibit have been omitted pursuant to a request for confidential treatment.
†	Denotes management contract or compensatory plan or arrangement.