Ascent Solar Technologies, Inc.
Form 424B5
November 17, 2014
Table of Contents

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Registration No. 333-199214

PROSPECTUS SUPPLEMENT

(To the Prospectus dated October 16, 2014)

ASCENT SOLAR TECHNOLOGIES, INC.

$3,000,000

of

Series D Preferred Stock and Common Stock

We are offering an aggregate of $3,000,000 of our newly designated Series D preferred stock (Series D Preferred Shares), up to 1,333,334 shares of common stock issuable upon conversion of the Series D Preferred Shares, and additional shares of common stock that we may choose to issue in payment of dividends on the Series D Preferred Shares, to the buyer (the Purchaser) under that certain Securities Purchase Agreement, dated as of November 14, 2014, among the buyer party thereto and us, pursuant to this prospectus supplement and the accompanying prospectus.

We are offering 3,000 Series D Preferred Shares to the Purchaser at a purchase price for each Series D Preferred Share of $1,000 per share. We expect the sale of the Series D Preferred Shares to close shortly after the date of this prospectus supplement, resulting in gross proceeds to us of $3,000,000. The Series D Preferred Shares will be convertible into common stock at a fixed conversion price of $2.25 per share of common stock. For a more detailed description of the terms of the Series D Preferred Shares, see the section entitled Description of Series D Preferred Stock beginning on page S-22 of this prospectus supplement.

The Series D Preferred Shares will not be listed on any national securities exchange. There is no established public trading market for the Series D Preferred Shares, and we do not expect a market to develop.

Our common stock is traded on the Nasdaq Capital Market under the symbol ASTI. On November 14, 2014, the last reported sale price of our common stock on the Nasdaq Capital Market was $2.00 per share.

As of November 17, 2014, the aggregate market value of our outstanding common stock held by non-affiliates was approximately $24,540,810, which was calculated based on 16,247,359 shares of outstanding common stock, of which

approximately 3,976,954 shares were held by affiliates, and a price per share of $2.00, which was the closing price of our common stock on the Nasdaq Capital Market on November 14, 2014. Pursuant to General Instruction I.B.6 of Form S-3, in no event will we sell securities registered on this registration statement in a public primary offering with a value exceeding more than one-third of the aggregate market value of our common stock held by non-affiliates in any 12-month period so long as the aggregate market value of our outstanding common stock held by non-affiliates remains below $75.0 million. During the 12 calendar months prior to and including the date of this prospectus supplement, we have not offered and sold any securities pursuant to General Instruction I.B.6 of Form S-3.

These are speculative securities. Investing in these securities involves significant risks. You should purchase these securities only if you can afford a complete loss of your investment. See Risk Factors beginning on page S-9 of this prospectus supplement.

NEITHER THE SECURITIES AND EXCHANGE COMMISSION NOR ANY STATE SECURITIES COMMISSION HAS APPROVED OR DISAPPROVED OF THESE SECURITIES OR PASSED UPON THE ADEQUACY OR ACCURACY OF THIS PROSPECTUS SUPPLEMENT OR THE ACCOMPANYING PROSPECTUS. ANY REPRESENTATION TO THE CONTRARY IS A CRIMINAL OFFENSE.

Our principal executive offices are located at 12300 North Grant Street, Thornton, Colorado 80241.

The date of this prospectus supplement is November 17, 2014.

Table of Contents

TABLE OF CONTENTS

Prospectus Supplement

ABOUT THIS PROSPECTUS SUPPLEMENT	S-1
PROSPECTUS SUPPLEMENT SUMMARY	S-2
RISK FACTORS	S-9
FORWARD-LOOKING STATEMENTS	S-20
USE OF PROCEEDS	S-22
RATIO OF EARNINGS TO COMBINED FIXED CHARGES AND PREFERRED STOCK DIVIDENDS	S-22
PLAN OF DISTRIBUTION	S-22
DESCRIPTION OF SERIES D PREFERRED STOCK	S-22
DESCRIPTION OF SECURITIES	S-24
EXPERTS	S-28
LEGAL MATTERS	S-28
INFORMATION INCORPORATED BY REFERENCE	S-29

Prospectus

ABOUT THIS PROSPECTUS	1
PROSPECTUS SUMMARY	2
RISK FACTORS	6
FORWARD-LOOKING STATEMENTS	6
USE OF PROCEEDS	7
DILUTION	8
PLAN OF DISTRIBUTION	8
DESCRIPTION OF SECURITIES	9
EXPERTS	15
LEGAL MATTERS	16
INFORMATION INCORPORATED BY REFERENCE	16
WHERE YOU CAN FIND MORE INFORMATION	17
INDEMNIFICATION	17
DISCLOSURE OF COMMISSION POSITION ON INDEMNIFICATION OF SECURITIES ACT LIABILITIES	18

Table of Contents

ABOUT THIS PROSPECTUS SUPPLEMENT

This document is in two parts. The first part is this prospectus supplement, which describes the specific terms of the offering and also adds to and updates information contained in the accompanying prospectus and the documents incorporated by reference into this prospectus supplement and the accompanying prospectus. The second part, the accompanying prospectus dated October 16, 2014, including the documents incorporated by reference, provides more general information. Generally, when we refer to this prospectus, we are referring to both parts of this document combined. To the extent there is a conflict between the information contained in this prospectus supplement, on the one hand, and the information contained in the accompanying prospectus or in any document incorporated by reference that was filed with the Securities and Exchange Commission, or SEC, before the date of this prospectus supplement, on the other hand, you should rely on the information in this prospectus supplement. If any statement in one of these documents is inconsistent with a statement in another document having a later date, the statement in the document having the later date modifies or supersedes the earlier statement. You should read this prospectus supplement and the accompanying prospectus, including the information incorporated by reference and any free writing prospectus that we may provide to you in connection with this offering, in their entirety before making an investment decision.

You should rely only on the information contained or incorporated by reference in this prospectus supplement and the accompanying prospectus, along with the information contained in any free writing prospectus that we may provide to you in connection with this offering. We have not authorized anyone to provide you with different or additional information. If anyone provides you with different or inconsistent information, you should not rely on it.

You should assume that the information appearing in this prospectus supplement, the accompanying prospectus, the documents incorporated by reference in this prospectus supplement and the accompanying prospectus, and in any free writing prospectus that we may provide to you in connection with this offering is accurate only as of the respective dates of those documents. Our business, financial condition, results of operations and prospects may have changed since those dates.

Table of Contents

PROSPECTUS SUPPLEMENT SUMMARY

The following summary highlights selected information contained elsewhere in this prospectus supplement, the accompanying prospectus and the documents incorporated by reference in this prospectus supplement and the accompanying prospectus. While we believe that this summary highlights some of the most important information about Ascent Solar Technologies, Inc. and this offering, you should carefully read this entire prospectus supplement, the accompanying prospectus and the documents that they incorporate by reference. You should pay special attention to the Risk Factors section of this prospectus supplement beginning on page S-9 and in our Annual Report on Form 10-K for the year ended December 31, 2013 and each subsequently filed annual report on Form 10-K and quarterly report on Form 10-Q. In this prospectus, references to we, us, our, Ascent, Ascent Solar or the Company mean Ascent Solar Technologies, Inc.

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.

Table of Contents

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.

Recent Strategic Developments

Introduction of EnerPlex Consumer Products

In February 2012, we began to reposition our business model with an immediate focus on developing downstream consumer products. In June 2012, we launched our EnerPlex line of consumer products, and introduced our first product, the Surfr , under the EnerPlex brand. The Surfr is 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, our 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 2013. 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 2013, we introduced the Surfr battery and solar case for the Samsung Galaxy S® 4, and in December 2013, we introduced the Surfr battery and solar case for Apple s iPhone® 5. In addition, we added an assortment of useful accessories to our product lines, 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. During 2014, we introduced the Jumpr Slate 10K and 5K, which are thin lithium polymer portable power banks.

We continue to aggressively pursue 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 35 stores across 9 states. Each store is provided with EnerPlex branded merchandising assets to highlight the uniqueness of our product lines. In addition, we currently have a total of 11 automated retail stores (kiosks) in operation. 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 of our products due to 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.

Table of Contents

Suqian Joint Venture

On July 2, 2013, we entered into a framework agreement for the establishment of a joint venture (the 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 Suqian 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 and office space in the Suqian Economic and Industrial Development Science Park. The Joint Venture will build a 100MW factory over six years to manufacture our proprietary thin-film CIGS photovoltaic modules on flexible polyimide in addition to related consumer products.

We shall purchase the factory within the first 5 years at the initial construction cost, and shall also purchase Suqian s ownership interest in the Joint Venture within 5 years at 1.5 times of Suqian s cash investment.

In the initial phase of the project, we and Suqian will form the Joint Venture in which Suqian will inject approximately $4.8 million in cash and have majority interest of 75%. We shall contribute approximately $1.6 million in cash and hold a minority interest of 25%. Subsequently, Suqian will further contribute 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 80% ownership.

Under the definitive agreement, Suqian will also provide a package of additional incentives including:

- A 5-year corporate tax holiday and a further 50% tax rebate over the following 5 years,
- Full rebate of value-added tax for the first 2 years and 50% rebate for the subsequent 3 years, and
- Free accommodations for up to 3 years for key scientists, engineers and management personnel of the Joint Venture.

As phase two of this program is implemented, we 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.

The implementation of the definitive agreement with Suqian, including the formation of the Joint Venture, 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.

On September 17, 2014, we were granted the Certificate of Approval for Establishment with Foreign Investment in the People s Republic of China, and on September 24, 2014, the Company was officially granted the business license to operate the Joint Venture. These documents were the main gating factors for starting the operations of the Joint Venture. Several activities, including the cash injection by Suqian into the Joint Venture and the transfer of equipment by the Company, will begin during the forth quarter of 2014. We expect that certain parts of the Joint Venture s factory will be in operation by the end of the first quarter of 2015.

Need for Additional Capital

Since inception, we have incurred significant losses. We expect to continue to incur net losses in the near term. For the nine month period ended September 30, 2014, our cash used in operations was $20.7 million. For the year ended December 31, 2013, our cash used in operations was $20.3 million. At September 30, 2014, we had cash and equivalents of $1.0 million. At December 31, 2013, we had cash and equivalents of approximately $3.3 million.

We do not expect that sales revenue and cash flows will be sufficient to support operations and cash requirements until we have fully implemented our new consumer products strategy. In 2014, we will incur a base level of maintenance capital expenditures and relatively minor improvements to the existing asset base. Additional

Table of Contents

projected product revenues are not anticipated to result in a positive cash flow position for the year 2014 overall. We will need to raise additional capital in order to continue our current level of operations in 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 are exploring opportunities to secure additional financing through strategic or financial investors, but there is no assurance that 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.

Going Concern Qualification

On March 28, 2014, we filed our Annual Report on Form 10-K with the Securities and Exchange Commission (the SEC), which Annual Report included our audited financial statements for the year ended December 31, 2013. The report of our independent registered public accounting firm on such financial statements contained an explanatory paragraph expressing substantial doubt regarding our ability to continue as a going concern.

The full text of the report of our independent registered public accounting firm is contained in our Annual Report on Form 10-K for the year ended December 31, 2013, which is incorporated by reference into this prospectus.

Corporate Information

We are incorporated under the laws of Delaware. Our principal business office is located at 12300 North Grant Street, Thornton, Colorado 80241, and our telephone number is (720) 872-5000. Our website address is *www.ascentsolar.com*. Information contained on our website or any other website does not constitute part of this prospectus.

This Offering

Securities Offered	$3,000,000 of our Series D Preferred Shares. Up to 1,333,334 shares of common stock issuable upon conversion of the Series D Preferred Shares. Also, additional shares of common stock that we may choose to issue in payment of dividends on the Series D Preferred Shares.
Offering Price	The per share purchase price for the Series D Preferred Shares will be $1,000.
Manner of Offering	The Series D Preferred Shares will be issued directly to the buyer (the Purchaser) under that certain Securities Purchase Agreement, dated as of November 14, 2014 (the Purchase Agreement), among the Purchaser and us. We are offering 3,000 Series D Preferred Shares to the Purchaser at a purchase price for each Series D Preferred Share of $1,000 per share. We

	expect the sale of Series D Preferred Shares to close shortly after the date of this prospectus supplement.
Use of Proceeds	We intend to use the net proceeds from this offering for working capital, including to fund the continued operations and expansion of our retail channels for our EnerPlex products in the U.S., Europe and Asia, brand building, as well as the launch of additional EnerPlex products. See Use of Proceeds on page S-22.
	We will not receive any proceeds resulting from the sale by the Purchaser of common stock issued to them in respect of the Series D Preferred Shares offered hereby.
Market for the Series D Preferred Shares	There is no established public trading market for the Series D Preferred Shares and we do not expect a market to develop. In addition, we do not intend to apply for listing of the Series D Preferred Shares on any securities exchange.

Table of Contents

Market for Our Common Stock	Our common stock is quoted on The Nasdaq Capital Market under the symbol ASTI .
Risk Factors	This investment involves a high degree of risk. See Risk Factors beginning on page S-9 of this prospectus supplement as well as the other information included in or incorporated by reference in this prospectus supplement and the accompanying prospectus for a discussion of risks you should consider carefully before making an investment decision.
Concurrent Sale of Notes and Warrants	Concurrently with this offering, we are selling to the Purchaser pursuant to the Purchase Agreement (i) an aggregate original principal amount of $32 million of Senior Secured Convertible Notes due 2018 (the Notes) and (ii) warrants (the Warrants) to purchase up to 7,777,778 shares of common stock of the Company at an exercise price of $2.25 per share of common stock. The Notes and Warrants were offered and sold to the Purchaser in reliance upon exemptions from the registration requirements under Section 4(a)(2) under the Securities Act of 1933, as amended (Securities Act), and Rule 506 of Regulation D promulgated thereunder. We expect to receive aggregate gross proceeds of approximately $4.5 million on the closing date of the sale of the Series D Preferred Shares, the Notes and the Warrants to the Purchaser (the Closing Date). The Notes bear interest at a rate of 7% per annum, subject to certain adjustments, and have a monthly amortization schedule. Unless earlier converted or redeemed, the Notes will mature in May 2018. Monthly interest payments and principal payments on the Notes may be paid in cash or shares of our common stock, at our option, subject to certain conditions. The Notes are convertible, in whole or in part, at the holder s option, into shares of our common stock at a price of $2.25 per share, subject to certain adjustments. The Notes may also be converted into shares of common stock at our option if the closing price of our common stock exceeds the conversion price by 200% for fifteen consecutive trading days. In addition, a holder of the Notes has the option to convert a portion of the Notes into shares of Common Stock at an Alternate Conversion Price equal to the lowest of (i) the Conversion Price then in effect and (ii) 85% of the quotient of (A) the sum of the volume-weighted average price of the Common Stock for each of the three lowest trading days during the ten consecutive trading day period ending and including the trading day immediately prior to the date of the applicable conversion date, divided by three. The Warrants are exercisable on and after the six month anniversary of the Closing Date and expire on the fifth anniversary of such initial exercisability date. Any funds received by us from exercise of the

Warrants would be in addition to the proceeds received by us from the Purchaser on the Closing Date.

In connection with the Purchase Agreement, we entered into a Registration Rights Agreement, pursuant to which we agreed to register no less than 4,000,000 shares of common stock issuable upon conversion of the Notes, including shares of common stock that may be issuable as payments of principal and interest on the Notes. We also agreed, under certain circumstances, to register in an additional registration statement 200% of the sum of (i) the maximum number of shares of common stock issuable pursuant to the Notes and (B) the maximum number of shares of common stock issuable upon exercise of the Warrants.

We agreed to file the initial registration statement (the Initial Registration Statement) with the SEC as soon as practicable, but no later than the 30th calendar day after the Closing Date. If the registration statement is not declared effective by the earlier of the 90th calendar day after the Closing Date and the 2nd business day after the date that we are notified by the SEC that such registration statement will not be subject to review (the Effectiveness Deadline), we shall pay to each holder of the Notes and Warrants an amount in cash equal to two percent (2%) of such holder s original principal amount of Notes as stated in such holder s Note on the Closing Date (i) on the date of

Table of Contents

	that the registration statement was not declared effective by the Effectiveness Deadline and (ii) on every 30th day anniversary of such date until the registration statement becomes effective.
	In connection with the Purchase Agreement, TFG Radiant Investment Group Ltd. (TFG Radiant), our largest stockholder, entered into a Voting Agreement with us. Pursuant to the Voting Agreement, TFG Radiant has agreed to vote all of the shares of common stock that it owns in favor of the stock issuances related to the Series D Preferred Shares, the Notes and the Warrants and certain other stockholder proposals. We intend to seek stockholder approval for these matters at a special stockholders meeting to be held in December 2014 or January 2015.
19.99% Cap	We are prohibited from issuing shares of common stock in connection with the Series D Preferred Shares, the Notes and the Warrants in excess of 19.99% of the issued and outstanding shares of our common stock immediately prior to the transaction unless stockholder approval of such issuance of securities is obtained as required by NASDAQ Listing Rule 5635(d).
	Under the Purchase Agreement, we are required to seek stockholder approval of issuances of our common stock in connection with the Purchase Agreement in excess of such 19.99% limit at a special stockholders meeting to be held no later than January 28, 2015. We intend to hold such special stockholders meeting in December 2014 or January 2015.
Series D Preferred Shares	
Rank	The Series D Preferred Shares, with respect to dividend rights and rights upon our liquidation, dissolution or winding up, ranks: (a) senior with respect to all shares of capital stock of the Company, except for our Series A Preferred Stock that is currently issued and outstanding (the Existing Preferred Securities) and (b) on a parity with respect to the Existing Preferred Securities.
Dividends	Holders of the Series D Preferred Shares will be entitled to dividends in the amount of 7% per annum, subject to an increase to 15% per annum upon the occurrence and continuance of certain triggering events. Dividends are payable monthly in shares of common stock or cash, at our option. Dividends are computed on the basis of a 360-day year and twelve 30-day months and are payable in arrears monthly and are compounded monthly.

Conversion Rights	The Series D Preferred Shares are convertible into common stock at an initial fixed conversion price of $2.25 per share of common stock (the Conversion Price), subject to certain adjustments. The Series D Preferred Shares may be converted into shares of common stock at any time at the option of the holder. The Series D Preferred Shares may also be converted into shares of common stock at our option if the closing price of our common stock exceeds the Conversion Price by 200% for fifteen consecutive trading days. In addition, a holder of the Series D Preferred Stock has the option to convert a portion of the Series D Preferred Stock into shares of Common Stock at an Alternate Conversion Price equal to the lowest of (i) the Conversion Price then in effect and (ii) 85% of the quotient of (A) the sum of the volume-weighted average price of the Common Stock for each of the three lowest trading days during the ten consecutive trading day period ending and including the trading day immediately prior to the date of the applicable conversion date, divided by three. If and whenever on or after the Closing Date, we issue or sell any shares of common stock for a consideration per share (the New Issuance Price) less than a price equal to the Conversion Price in effect immediately prior to such issuance or sale (a Dilutive Issuance), then, immediately after such Dilutive Issuance, the Conversion Price then in effect shall be reduced to an amount equal to the New Issuance Price.

Table of Contents

Optional Redemption by the Company	We may redeem all, but not less than all, of the Series D Preferred Shares outstanding at any time after 30 calendar days after the earlier of (A) the date that the Initial Registration Statement being filed to register common stock underlying the Notes becomes effective or (B) the date that the common stock underlying the Notes and Warrants are eligible for resale under Rule 144, provided that we meet certain equity conditions. In the case of an optional redemption of Series D Preferred Shares by us, the Series D Preferred Shares shall be redeemed in cash at a price with a redemption premium of 120% calculated by the formula specified in the Certificate of Designations, Preferences and Rights of the Series D Convertible Preferred Stock (the Series D Preferred Stock Certificate of Designations). We are required to provide holders of the Series D Preferred Shares with at least 90 trading days prior notice of our election to redeem the Notes.
Triggering Events	The Series D Preferred Stock Certificate of Designations provides that Triggering Events include, but are not limited to: (i) the Series D Preferred Shares, or shares of our common stock issuable upon conversion of the Series D Preferred Shares, not being freely tradable without restriction, (ii) suspension from trading of our common stock on the Nasdaq Capital Market or other applicable stock exchange; (iii) our failure to make dividend payments when due; (iv) bankruptcy or insolvency of the Company; (v) our breach of the Purchase Agreement, Notes, Warrants or Series D Preferred Stock Certificate of Designations under certain circumstances, and (vi) any default under the Notes. If a triggering event occurs, we may be required to redeem all or any number of the Series D Preferred Shares in cash at a price with a redemption premium of 125% calculated by the formula specified in the Series D Preferred Stock Certificate of Designations.
Change of Control	The Series D Preferred Stock Certificate of Designations prohibits us from entering into transactions involving a change of control, unless the successor entity is a publicly traded corporation that assumes all of our obligations under the Series D Preferred Stock Certificate of Designations in a written agreement approved by holders of the Series D Preferred Shares. In the event of transactions involving a change of control, a holder of Series D Preferred Shares will have the right to require us to redeem all or any number of the Series D Preferred Shares it holds in cash at a price with a redemption premium of 125% calculated by the formula specified in the Series D Preferred Stock Certificate of Designations.

Liquidation Value	Upon our liquidation, dissolution or winding up, holders of Series D Preferred Shares will be entitled to be paid out of our assets, before any amount shall be paid to the holders of any other shares of our capital stock (except for our existing and outstanding Series A preferred stock), an amount per Series D Preferred Share equal to the sum of (i) the Black Scholes Value (as defined in the Warrants) with respect to the outstanding portion of all Warrants held by the holder and (ii) the greater of (A) 120% of the conversion amount thereof and (B) the amount per share such holder would receive if such holder converted such Series D Preferred Shares into common stock immediately prior to the date of payment.
Voting Rights	Except as otherwise required by law (or with respect to approval of certain actions), the Series D Preferred Shares will not have voting rights.
Limitations on Beneficial Ownership	Series D Preferred Shares may not be converted, and shares of our common stock may not be issued in connection therewith, if, after giving effect to the conversion or issuance, the holder together with its affiliates would beneficially own in excess of 4.99% of the outstanding shares of our common stock. At each holder s option, the cap may be raised or lowered to any other percentage not in excess of 9.99%, except that any increase will only be effective upon 61-days prior notice to us.

Please see Description of Series D Preferred Stock beginning on page S-22 for more information.

Table of Contents

RISK FACTORS

Investing in our securities involves a high degree of risk. Before making an investment in our securities, you should carefully consider the risk factors set forth below and discussed under the section captioned Risk Factors contained in our Annual Report on Form 10-K for the year ended December 31, 2013 and each subsequently filed annual report on Form 10-K and quarterly report on Form 10-Q, which are incorporated by reference in this prospectus supplement and the accompanying prospectus in their entirety, together with the other information contained in this prospectus supplement, the accompanying prospectus and the documents we have incorporated by reference. If one or more of the possibilities described below or in the Risk Factors section of our Annual Report on Form 10-K for the year ended December 31, 2013 or Forms 10-K or Forms 10-Q filed thereafter actually occur, our operating results and financial condition would likely suffer and the trading price of our common stock could fall, causing you to lose some or all of your investment in the securities we are offering.

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 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;

we are able to design, manufacture, market, distribute and sell our newly introduced line of consumer oriented products;

Table of Contents

we effectively manage the planned ramp up of our operations;

we successfully develop and maintain strategic relationships with key partners, including original equipment manufacturers (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 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;

Table of Contents

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, 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 to 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

Table of Contents

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 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.

Table of Contents

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.

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.

Table of Contents

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 November 14, 2014, TFG Radiant owned approximately 24% 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.

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.

Table of Contents

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.

Table of Contents

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.

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;

Table of Contents

- 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;
- 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.

Table of Contents

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 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
- 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.

Table of Contents

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

Our common stock is currently traded on the NASDAQ Capital 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, during the 2014 calendar year, the closing price of our common stock traded (as adjusted to reflect a 1-for-10 reverse stock split of our common stock that occurred on August 26, 2014 (the Reverse Stock Split)) as low as $1.46 and as high as $7.50. 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.

If you purchase the securities sold in this offering, 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 Series A preferred stock, Series D preferred stock and our senior secured notes, including shares that would be issued if we elect to pay redemption amounts, interest and dividends in the form of common stock.

The conversion of our Series A preferred stock, Series D preferred stock and the Notes 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 interest due on the Series A preferred stock, Series D preferred stock and the Notes in the form of shares rather than cash. To the extent we issue common stock in payment of the amounts due in connection with our Series A preferred stock, Series D preferred stock and the Notes in the form of our common stock, rather than cash, such issuances will dilute the ownership interests of existing stockholders.

As of November 14, 2014, 212,390 shares of Series A preferred stock remained outstanding. If all remaining shares of Series A preferred stock were immediately converted as of the date of this prospectus supplement, we estimate that we would issue 212,390 common shares upon conversion and 581,890 additional common shares for make-whole amounts paid in common shares in lieu of cash.

If all of the 3,000 shares of Series D preferred stock being offered hereby were immediately converted as of the date of this prospectus supplement, we estimate that we would issue 1,333,334 common shares upon conversion. If all of the $32,000,000 of our Notes were immediately converted as of the date of this prospectus supplement, we estimate that we would issue 14,222,222 common shares upon conversion.

Table of Contents

There is no public market for the Series D Preferred Shares being offered in this offering.

There is no established public trading market for the Series D Preferred Shares being offered in this offering, and we do not expect a market to develop. In addition, we do not intend to apply for listing of the Series D Preferred Shares on any securities exchange. Without an active market, the liquidity of the Series D Preferred Shares will be limited.

Investors who convert their Series D Preferred Shares into common stock will incur immediate dilution in the net tangible book value per share of the common stock issuable upon conversion.

Upon conversion of Series D Preferred Shares, you will experience immediate and substantial dilution because the per share conversion price of your shares of Series D Preferred Shares ($2.25) will be higher than the net tangible book value per share of the outstanding common stock immediately after this offering.

Holders of the Series D Preferred Shares will have no rights as holders of common stock until they acquire common stock.

Until you acquire shares of common stock upon conversion of the Series D Preferred Shares, you will have no rights as a holder of our common stock, including rights to vote. Upon conversion of your Series D Preferred Shares, you will be entitled to exercise the rights of a holder of common stock only as to matters for which the record date occurs after the conversion date.

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.

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.

FORWARD-LOOKING STATEMENTS

This prospectus and the documents incorporated by reference into it contain forward-looking statements within the meaning of Section 27A of the Securities Act, and Section 21E of the Securities Exchange Act of 1934, as amended (the Exchange Act). Forward-looking statements are those that predict or describe future events or trends and that do not relate solely to historical matters. You can generally identify forward-looking statements as

Table of Contents

statements containing the words believe, expect, may, will, could, would, anticipate, intend, estimate, continue, assume or other similar expressions, although not all forward-looking statements contain these identifying words. All statements contained in this prospectus regarding our plans, objectives, goals, strategies, future events, future net sales or performance, capital expenditures, projected financial position, potential future revenues, projected costs, financing needs, plans or intentions relating to acquisitions, plans for the commercialization of our products, business trends and results that might be obtained by pursuing management s current plans and objectives are forward-looking statements. Forward-looking statements include, but are not necessarily limited to, those relating to:

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 ability to achieve profitability through our strategic alliance with TFG Radiant in designing, manufacturing and selling products;

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 Capital Market;

The commencement, or outcome, of legal proceedings against us, or by us, including ongoing litigation 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.

You should not place undue reliance on our forward-looking statements because the matters they describe are subject to known and unknown risks, uncertainties and other unpredictable factors, many of which are beyond our control. Our forward-looking statements are based on the information currently available to us and speak only as of

Table of Contents

the date on the cover of this prospectus supplement. New risks and uncertainties arise from time to time, and it is impossible for us to predict these matters or how they may affect us. Over time, our actual results, performance or achievements will likely differ from the anticipated results, performance or achievements that are expressed or implied by our forward-looking statements, and such differences might be significant and materially adverse to our investors. We have no duty to, and do not intend to, update or revise the forward-looking statements in this prospectus supplement after the date of this prospectus supplement except to the extent required by the federal securities laws. You should consider all risks and uncertainties disclosed in our filings with the SEC described in the section of this prospectus supplement entitled Information Incorporated by Reference , all of which are accessible on the SEC s website at www.sec.gov.

USE OF PROCEEDS

The amount of gross proceeds from this offering of Series D Preferred Shares will be $3 million. We intend to use the net proceeds from this offering for working capital, including the funding of continued operations, expansion of retail channels for our EnerPlex products in the U.S., Europe and Asia, brand building and the launch of additional EnerPlex products, and for other general corporate purposes. We will not receive any proceeds resulting from the sale by the Purchaser of common stock issued to the Purchaser in respect of the Series D Preferred Shares offered hereby.

RATIO OF EARNINGS TO COMBINED FIXED CHARGES AND PREFERRED STOCK DIVIDENDS

We did not have any earnings for the nine months ended September 30, 2014 or the years ended December 31, 2013, 2012, 2011, 2010 and 2009. For this reason, no ratios are provided for these periods.

PLAN OF DISTRIBUTION

On November 14, 2014, we entered into the Purchase Agreement with the Purchaser, pursuant to which we have agreed to issue and sell the Series D Preferred Shares directly to the Purchaser.

We are offering 3,000,000 Series D Preferred Shares to the Purchaser at a purchase price for each Series D Preferred Share of $1,000 per share. We expect the closing of the sale of Series D Preferred Shares, Notes and Warrants to the Purchaser to take place shortly after the date of this prospectus supplement. Upon the sale of the Series D Preferred Shares to the Purchaser, we will receive gross proceeds of $3,000,000.

We are prohibited from issuing shares of common stock in connection with the Series D Preferred Shares, the Notes and the Warrants in excess of 19.99% of the issued and outstanding shares of our common stock immediately prior to the transaction unless stockholder approval of such issuance of securities is obtained as required by NASDAQ Listing Rule 5635(d). Under the Purchase Agreement, we are required to seek stockholder approval of issuances of our common stock in connection with the Purchase Agreement in excess of such 19.99% limit at a special stockholders meeting to be held no later than January 28, 2015. We intend to hold such special stockholders meeting in December 2014 or January 2015.

We have agreed to reimburse the Purchaser for certain of their expenses, including reasonable fees of the Purchaser s counsel, in connection with the offering of the Series D Preferred Shares, Notes and Warrants. We have agreed in the Purchase Agreement to provide indemnification and contribution to the Purchaser against certain liabilities, including liabilities under the Securities Act.

We estimate that the total expenses of the offering payable by us will be approximately $250,000.

DESCRIPTION OF SERIES D PREFERRED STOCK

The terms of the Series D Preferred Shares will be contained in the Series D Preferred Stock Certificate of Designations that will amend our certificate of incorporation, as amended. The following description is a summary of the material provisions of the Series D Preferred Shares and the Series D Preferred Stock Certificate of Designations. It does not purport to be complete. We urge you to read the Series D Preferred Stock Certificate of

Table of Contents

Designations because it, and not this description, defines your rights as a holder of Series D Preferred Shares. We will include the form of Series D Preferred Stock Certificate of Designations in a Current Report on Form 8-K that we will file with the Securities and Exchange Commission.

Rank

The Series D Preferred Shares, with respect to dividend rights and rights upon our liquidation, dissolution or winding up, ranks: (a) senior with respect to all shares of capital stock of the Company, except for our Series A preferred stock and (b) on a parity with respect to our Series A preferred stock.

Dividends

Holders of the Series D Preferred Shares will be entitled to dividends in the amount of 7% per annum, subject to an increase to 15% per annum upon the occurrence and continuance of certain triggering events. Dividends are payable monthly in shares of common stock or cash, at our option. Dividends are computed on the basis of a 360-day year and twelve 30-day months and are payable in arrears monthly and are compounded monthly.

Conversion

The Series D Preferred Shares are convertible into common stock at an initial fixed conversion price of $2.25 per share of common stock (the Conversion Price), subject to certain adjustments. The Series D Preferred Shares may be converted into shares of common stock at any time at the option of the holder. The Series D Preferred Shares may also be converted into shares of common stock at our option if the closing price of our common stock exceeds the Conversion Price by 200% for fifteen consecutive trading days.

In addition, a holder of the Series D Preferred Stock has the option to convert a portion of the Series D Preferred Stock into shares of Common Stock at an Alternate Conversion Price equal to the lowest of (i) the Conversion Price then in effect and (ii) 85% of the quotient of (A) the sum of the volume-weighted average price of the Common Stock for each of the three lowest trading days during the ten consecutive trading day period ending and including the trading day immediately prior to the date of the applicable conversion date, divided by three.

If and whenever on or after the Closing Date, we issue or sell any shares of common stock for a consideration per share (the New Issuance Price) less than a price equal to the Conversion Price in effect immediately prior to such issuance or sale (a Dilutive Issuance), then, immediately after such Dilutive Issuance, the Conversion Price then in effect shall be reduced to an amount equal to the New Issuance Price.

Optional Redemption by the Company

We may redeem all, but not less than all, of the Series D Preferred Shares outstanding at any time after 30 calendar days after the earlier of (A) the date that the Initial Registration Statement being filed to register common stock underlying the Notes becomes effective or (B) the date that the common stock underlying the Notes and Warrants are eligible for resale under Rule 144, provided that we meet certain equity conditions. In the case of an optional redemption of Series D Preferred Shares by us, the Series D Preferred Shares shall be redeemed in cash at a price with a redemption premium of 120% calculated by the formula specified in the Certificate of Designations, Preferences and Rights of the Series D Convertible Preferred Stock (the Series D Preferred Stock Certificate of Designations). We are required to provide holders of the Series D Preferred Shares with at least 90 trading days prior notice of our election to redeem the Notes.

Triggering Events

The Series D Preferred Stock Certificate of Designations provides that Triggering Events include, but are not limited to: (i) the Series D Preferred Shares, or shares of our common stock issuable upon conversion of the Series D Preferred Shares, not being freely tradable without restriction, (ii) our suspension from trading our common stock on the Nasdaq Capital Market or other applicable stock exchange; (iii) our failure to make dividend payments when due; (iv) bankruptcy or insolvency of the Company; (v) our breach of the Purchase Agreement, Notes, Warrants or Series D Preferred Stock Certificate of Designations under certain circumstances, and (vi) any default under the Notes.

Table of Contents

If a triggering event occurs, we may be required to redeem all or any number of the Series D Preferred Shares in cash at a price with a redemption premium of 125% calculated by the formula specified in the Series D Preferred Stock Certificate of Designations.

Change of Control

The Series D Preferred Stock Certificate of Designations prohibits us from entering into transactions involving a change of control, unless the successor entity is a publicly traded corporation that assumes all of our obligations under the Series D Preferred Stock Certificate of Designations in a written agreement approved by holders of the Series D Preferred Shares.

In the event of transactions involving a change of control, a holder of Series D Preferred Shares will have the right to require us to redeem all or any number of the Series D Preferred Shares it holds in cash at a price with a redemption premium of 125% calculated by the formula specified in the Series D Preferred Stock Certificate of Designations.

Liquidation Value

Upon our liquidation, dissolution or winding up, holders of Series D Preferred Shares will be entitled to be paid out of our assets, before any amount shall be paid to the holders of any other shares of our capital stock (except for the Excluded Securities), an amount per Series D Preferred Share equal to the sum of (i) the Black Scholes Value (as defined in the Warrants) with respect to the outstanding portion of all Warrants held by the holder and (ii) the greater of (A) 120% of the conversion amount thereof and (B) the amount per share such holder would receive if such holder converted such Series D Preferred Shares into common stock immediately prior to the date of payment.

Voting Rights

Except as otherwise required by law (or with respect to approval of certain actions), the Series D Preferred Shares will not have voting rights.

Limitations on Beneficial Ownership

Series D Preferred Shares may not be converted, and shares of our common stock may not be issued in connection therewith, if, after giving effect to the conversion or issuance, the holder together with its affiliates would beneficially own in excess of 4.99% of the outstanding shares of our common stock. At each holder s option, the cap may be raised or lowered to any other percentage not in excess of 9.99%, except that any increase will only be effective upon 61-days prior notice to us.

DESCRIPTION OF SECURITIES

Our authorized capital stock consists of 150,000,000 shares of common stock, $0.0001 par value, and 25,000,000 shares of preferred stock, $0.0001 par value. As of November 14, 2014, 750,000 shares have been designated as Series A Preferred Stock, 2,000 shares have been designated as Series B-1 Preferred Stock, 1,000 shares have been designated as Series B-2 Preferred Stock, 1,000 shares have been designated as Series C Preferred Stock and 3,000 shares have been designated as Series D Preferred Stock. As of November 14, 2014, we had 16,247,359 shares of common stock (as adjusted to reflect the Reverse Stock Split), 212,390 shares of Series A Preferred Stock, no shares of Series D Preferred Stock, and no shares of Series B-1, Series B-2 or Series C Preferred Stock outstanding.

The following is a summary of the rights of our common stock, preferred stock (including our Series A Preferred Stock) and certain outstanding rights to obtain our common stock. It does not purport to be complete. For more detailed information about the terms of our capital stock, please see our Amended and Restated Certificate of Incorporation, as amended (our Certificate of Incorporation), including the certificates of designation for each of the Series A Preferred Stock, Series B Preferred Stock, Series C Preferred Stock and Series D Preferred Stock, and our Second Amended and Restated Bylaws, as amended (our Bylaws).

Table of Contents

Common Stock

Holders of our common stock are entitled to one vote for each share on all matters submitted to a stockholder vote and may not cumulate their votes. Holders of common stock are entitled to share in all dividends that our Board, in its discretion, declares from legally available funds. In the event of our liquidation, dissolution or winding up, each outstanding share entitles its holder to participate pro rata in all assets that remain after payment of liabilities and after providing for each class of stock, if any, having preference over the common stock.

Except for TFG Radiant, which holds pre-emptive rights with respect to certain equity issuances by us (on terms no less favorable than any such issuance) in order to maintain their percentage ownership in our common stock, no other holders of our common stock have any conversion, preemptive or other subscription rights, and there are no redemption provisions applicable to our common stock. The rights of the holders of common stock are subject to any rights that may be fixed for holders of preferred stock.

Preferred Stock

Our Board is authorized by our Certificate of Incorporation to establish classes or series of preferred stock and fix the designation, powers, preferences and rights of the shares of each such class or series and the qualifications, limitations or restrictions thereof without any further vote or action by our stockholders. Any shares of preferred stock so issued could have priority over our common stock with respect to dividend or liquidation rights. Any future issuance of preferred stock may have the effect of delaying, deferring or preventing a change in our control without further action by our stockholders and may adversely affect the voting and other rights of the holders of our common stock.

The issuance of shares of preferred stock, or the issuance of rights to purchase such shares, could be used to discourage an unsolicited acquisition proposal. For instance, the issuance of a series of preferred stock might impede a business combination by including class voting rights that would enable a holder to block such a transaction. In addition, under certain circumstances, the issuance of preferred stock could adversely affect the voting power of holders of our common stock. Although our Board is required to make any determination to issue preferred stock based on its judgment as to the best interests of our stockholders, our Board could act in a manner that would discourage an acquisition attempt or other transaction that some, or a majority, of our stockholders might believe to be in their best interests or in which such stockholders might receive a premium for their stock over the then market price of such stock.

Series A Preferred Stock

On June 17, 2013, we entered into a Securities Purchase Agreement (the Seow Purchase Agreement) with Seng Wei Seow (Seow), pursuant to which Seow agreed to purchase from us, and we agreed to sell to Seow (subject to the terms and conditions set forth therein), an aggregate of $6,000,000 of Series A Preferred Stock at a price of $8.00 per share of Series A Preferred Stock and warrants to purchase up to 262,500 shares of our common stock (as adjusted to reflect the Reverse Stock Split).

In connection with the Seow Purchase Agreement, we designated 750,000 shares of Series A Preferred Stock. The Series A Preferred Stock ranks senior to our common stock with respect to dividend rights, pari passu with respect to rights upon liquidation to our common stock, and junior to all existing and future indebtedness. Except as otherwise required by law (or with respect to approval of certain actions), the Series A Preferred Stock have no voting rights.

Holders of Series A Preferred Stock are entitled to cumulative dividends at a rate of 8.0% per annum (subject to adjustment in certain circumstances) when and if declared by the Board. We are obligated to pay certain make-whole

amounts to the holders of Series A Preferred Stock, if the stock is redeemed or converted (as described below) prior to the fourth anniversary of its issuance date, in lieu of dividends that the stockholders would have otherwise received. The dividends and make-whole amounts (if any) may be paid in cash or in the form of common stock at the discretion of the Board.

Table of Contents

We have the right to redeem all or a portion of the Series A Preferred Stock at any time at a redemption price of $8.00 per share, plus any accrued and unpaid dividends and plus the make-whole amount (if any).

The Series A Preferred Stock may be converted into shares of our common stock at any time at the option of the holder. In the event of a conversion by the holder, the price per share is equal to (a) Original Issue Price (as defined in the certificate of designation for the Series A Preferred Stock) multiplied by (b) the number of shares of Series A Preferred Stock shares being converted, divided by (c) the conversion price of $8.00 (as adjusted to reflect the Reverse Stock Split).

A conversion by us may be effected if certain Equity Conditions (as defined in the certificate of designation for the Series A Preferred Stock) are met and in the event that the closing price of our common stock exceeds 200% of the conversion price for any 20 consecutive trading days. In the event of a Company conversion, we shall issue the number of shares of common stock equal to (a) the Original Issue Price multiplied by (b) the number of shares of Series A Preferred Stock being converted, divided by (c) the conversion price of $8.00 (as adjusted to reflect the Reverse Stock Split).

Unless we have received the approval of the holders of a majority of the Series A Preferred Stock then outstanding, we shall not (i) alter or change adversely the powers, preferences or rights given to the Series A Preferred Stock or alter or amend the certificate of designation for the Series A Preferred Stock, (ii) authorize or create any class of stock ranking as to distribution of dividends senior to the Series A Preferred Stock, (iii) amend our Certificate of Incorporation or other charter documents in breach of any of the provisions in the certificate of designation for the Series A Preferred Stock, (iv) increase the authorized number of shares of Series A Preferred Stock, or (v) enter into any agreement with respect to the foregoing.

Upon any liquidation, dissolution or winding up of the Company, after payment or provision for payment of our debts and other liabilities, 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.

In January 2014, our stockholders approved all issuances of shares of common stock in connection with the securities issued pursuant to the Seow Purchase Agreement pursuant to Nasdaq Listing Rule 5635(d).

Authorized but Unissued Shares

The authorized but unissued shares of common stock are available for future issuance without stockholder approval, unless otherwise required by law or applicable stock exchange rules. Additional authorized but unissued shares may be used for a variety of corporate purposes, including future public offerings to raise additional capital, corporate acquisitions and employee benefit plans. The existence of authorized but unissued shares could hinder or discourage an attempt to obtain control of us by means of a proxy contest, tender offer, merger or otherwise.

Warrants under the Seow Purchase Agreement

Under the Seow Purchase Agreement, we agreed to sell warrants (the Seow Warrants) to purchase up to 262,500 shares of our common stock at an exercise price of $9.00 per share of common stock (as adjusted to reflect the Reverse Stock Split). The Seow Warrants have a three year term until June 2016.

2005 Stock Option Plan

At a special meeting of the Company s stockholders held on October 22, 2014, the stockholders approved an amendment and restatement of our 2005 Stock Option Plan, as amended (the Option Plan). The Option Plan currently authorizes the grant of up to 3,400,000 shares of common stock (as adjusted to reflect the Reverse Stock Split and subject to further adjustment for stock splits and similar capital changes) in connection with incentive stock option grants and non-qualified stock option grants. Employees and, in the case of nonqualified stock options, directors, consultants or other service providers are eligible to receive grants under our plans. According to the terms of the Option Plan, no employee may be granted, in any fiscal year, options to purchase more than 500,000 shares. As of November 14, 2014, there were 183,711 options vested or expected to vest in the future under our Option Plan. As of November 14, 2014, 3,100,297 shares remained available for future grant under our Option Plan.

Table of Contents

2008 Restricted Stock Plan

At a special meeting of the Company s stockholders held on October 22, 2014, the stockholders approved an amendment and restatement of our 2008 Restricted Stock Plan, as amended (the Stock Plan). The Stock Plan currently authorizes the grant of up to 1,500,000 shares of restricted common stock and restricted stock units (as adjusted to reflect the Reverse Stock Split and subject to further adjustment for stock splits and similar capital changes) to employees, directors, consultants or other service providers. According to the terms of the Stock Plan, no individual may be granted, in any fiscal year, more than 200,000 shares. Vesting of shares of restricted stock granted under the Stock Plan may occur over a specified period of time or based upon performance metrics announced at the time of grant. As of November 14, 2014, 58,891 restricted stock units were expected to vest in the future under the Stock Plan. As of November 14, 2014, 1,110,891 shares remained available for future grant under the Stock Plan.

Registration Rights

Pursuant to a stockholders agreement between us and TFG Radiant, TFG Radiant holds certain registration rights related to its shares. We granted Seow certain registration rights in connection with the execution of the Seow Purchase Agreement. We granted Ironridge certain registration rights in connection with the execution of the Ironridge Purchase Agreement, which rights have been satisfied. On November 14, 2014, we granted the Purchaser certain registration rights in connection with the execution of the Purchase Agreement and the issuance of the Notes and Warrants.

Anti-Takeover Effects of Certain Provisions of Delaware Law and Our Certificate of Incorporation and Bylaws

Our Certificate of Incorporation and Bylaws contain a number of provisions that could make our acquisition by means of a tender or exchange offer, a proxy contest or otherwise more difficult. These provisions are summarized below.

Removal of Directors. Our Bylaws provide that our directors may only be removed by the affirmative vote of the shares entitled to vote at an election of directors, or for cause by a majority of the Board. Although our Bylaws do not give the Board the power to approve or disapprove stockholder nominations for the election of directors or of any other business stockholders desire to conduct at an annual or any other meeting, the Bylaws may have the effect of precluding a nomination for the election of directors or precluding the conduct of business at a particular annual meeting if the proper procedures are not followed, or discouraging or deterring a third party from conducting a solicitation of proxies to elect its own slate of directors or otherwise attempting to obtain control, even if the conduct of that solicitation or attempt might be beneficial to our stockholders.

Staggered Board. Staggered terms tend to protect against sudden changes in management and may have the effect of delaying, deferring or preventing a change in our control without further action by our stockholders. Our Board is divided into three classes, with one class of directors elected at each year s annual stockholders meeting.

Special Meetings. Our Bylaws provide that special meetings of stockholders can be called by the President, at the request of a majority of the Board or at the written request of holders of at least 50% of the shares outstanding and entitled to vote.

Undesignated Preferred Stock. The ability to authorize undesignated preferred stock makes it possible for our Board to issue preferred stock with voting or other rights or preferences that could impede the success of any attempt to acquire us. These and other provisions may have the effect of deferring hostile takeovers or delaying changes in control or management of our Company.

Table of Contents

Delaware Anti-Takeover Statute. We are subject to the provisions of Section 203 of the Delaware General Corporation Law regulating corporate takeovers. In general, Section 203 prohibits a publicly held Delaware corporation from engaging under certain circumstances in a business combination with an interested stockholder for a period of three years following the date the person became an interested stockholder unless:

- Prior to the date of the transaction that resulted in the stockholder becoming an interested stockholder, the board of directors of the corporation approved either the business combination or the transaction which resulted in the stockholder becoming an interested stockholder.

- Upon completion of the transaction that resulted in the stockholder becoming an interested stockholder, the stockholder owned at least 85% of the voting stock of the corporation outstanding at the time the transaction commenced, excluding for purposes of determining the number of shares outstanding (1) shares owned by persons who are directors and also officers and (2) shares owned by employee stock plans in which employee participants do not have the right to determine confidentially whether shares held subject to the plan will be tendered in a tender or exchange offer.

- On or subsequent to the date of the transaction that resulted in the stockholder becoming an interested stockholder, the business combination is approved by the board and authorized at an annual or special meeting of stockholders, and not by written consent, by the affirmative vote of at least 66 2/3% of the outstanding voting stock which is not owned by the interested stockholder.

Generally, a business combination includes a merger, asset or stock sale, or other transaction resulting in a financial benefit to the interested stockholder. An interested stockholder is a person who, together with affiliates and associates, owns or, within three years prior to the determination of interested stockholder status, did own 15% or more of a corporation s outstanding voting securities. We expect the existence of this provision to have an anti-takeover effect with respect to transactions our Board does not approve in advance. We also anticipate that Section 203 may also discourage attempts that might result in a premium over the market price for the shares of common stock held by stockholders.

The provisions of Delaware law, our Certificate of Incorporation and our Bylaws could have the effect of discouraging others from attempting hostile takeovers and, as a consequence, they may also inhibit temporary fluctuations in the market price of our common stock that often result from actual or rumored hostile takeover attempts. These provisions may also have the effect of preventing changes in our management. It is possible that these provisions could make it more difficult to accomplish transactions that stockholders may otherwise deem to be in their best interests.

Listing

Our common stock is listed on the Nasdaq Capital Market under the trading symbol ASTI.

Transfer Agent and Registrar

The transfer agent and registrar of our common stock is Computershare Investor Services.

EXPERTS

The financial statements in our Annual Report on Form 10-K for the year ended December 31, 2013 have been audited by Hein & Associates LLP, an independent registered public accounting firm, to the extent and for the periods set forth in their report, and are incorporated in this prospectus supplement by reference in reliance upon such report and upon the authority of such firm as experts in accounting and auditing.

LEGAL MATTERS

The validity of the securities offered hereby will be passed on by Faegre Baker Daniels LLP, Boulder, Colorado.

Table of Contents

INFORMATION INCORPORATED BY REFERENCE

This prospectus supplement and the accompanying prospectus are part of a registration statement on Form S-3. The SEC allows this filing to incorporate by reference information that we previously filed with the SEC. This means we can disclose important information to you by referring you to other documents that we have filed with the SEC. The information that is incorporated by reference is considered part of this prospectus supplement, and information that we file later will automatically update and may supersede this information. For further information about us and the securities being offered, you should refer to the registration statement and the following documents that are incorporated by reference:

- Our annual report on Form 10-K filed on March 28, 2014, which contains audited financial statements for the fiscal year ended December 31, 2013;
- Our definitive proxy statements on Schedule 14A filed on April 25, 2014 and September 26, 2014;
- Our quarterly report on Form 10-Q filed on May 7, 2014 for the quarter ended March 31, 2014;
- Our quarterly report on Form 10-Q filed on August 13, 2014 for the quarter ended June 30, 2014;
- Our quarterly report on Form 10-Q filed on November 12, 2014 for the quarter ended September 30, 2014;
- Our current reports on Form 8-K filed on January 2, 2014, January 24, 2014, February 11, 2014, March 21, 2014, March 27, 2014, April 2, 2014, April 9, 2014, April 22, 2014, May 29, 2014, July 21, 2014, July 31, 2014, September 2, 2014, September 4, 2014, September 16, 2014, October 28, 2014 and November 17, 2014;
- All other reports filed by us pursuant to Section 13(a) or 15(d) of the Exchange Act since the end of the fiscal year covered by the annual report referred to above; and
- The description of our common stock contained in Forms 8-A filed on June 19, 2006 and August 8, 2006 and any amendments or reports filed for the purpose of updating such description.

All documents filed by us subsequent to those listed above with the SEC pursuant to Section 13(a), 13(c), 14 or 15(d) of the Exchange Act and, prior to the termination of the offering, shall be deemed to be incorporated by reference into this prospectus supplement and to be a part hereof from the date of filing of such documents. Any statement contained in a document incorporated by reference herein shall be deemed to be modified or superseded for purposes of this prospectus supplement to the extent that a statement contained herein or in any other subsequently filed document which also is or is deemed to be incorporated by reference herein modifies or supersedes such statement. Any statement so modified or superseded shall not be deemed, except as so modified or superseded, to constitute a part of this prospectus supplement.

Our filings with the SEC, including our annual report on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K and amendments to those reports, are available free of charge on our website at http://www.ascentsolar.com as soon as reasonably practicable after they are filed with, or furnished to, the SEC. You may request a copy of all documents that are incorporated by reference in this prospectus by writing or telephoning us at the following address and telephone number: Ascent Solar Technologies, Inc., Attention: Corporate Secretary, 12300 North Grant Street, Thornton, Colorado 80241, telephone (720) 872-5000. We will provide copies of all documents requested (not including exhibits to those documents, unless the exhibits are specifically incorporated by reference into those documents or this prospectus) without charge.

You may also read and copy any document we file at the SEC s Public Reference Room at 100 F Street, N.E., Washington, D.C. 20549. Please call the SEC at 1-800-SEC-0330 for more information about the operation of the Public Reference Room. The SEC maintains an Internet site that contains reports, proxy and information statements, and other information regarding issuers that file electronically with the SEC, including Ascent Solar Technologies, Inc. The SEC s Internet site can be found at www.sec.gov.

Table of Contents

PROSPECTUS

ASCENT SOLAR TECHNOLOGIES, INC.

UP TO $25,000,000

COMMON STOCK

PREFERRED STOCK

WARRANTS

We may sell from time to time the securities offered by this prospectus at prices and on terms to be determined at or prior to the time of each sale. We will describe the specific terms and amounts of the securities offered in a prospectus supplement for each sale. You should carefully read this prospectus and any prospectus supplement before you invest. This prospectus may not be used to sell securities unless accompanied by a prospectus supplement.

Our common stock is traded on the Nasdaq Capital Market under the symbol ASTI. On October 15, 2014, the last reported sale price of our common stock on the Nasdaq Capital Market was $1.46 per share.

As of October 15, 2014, the aggregate market value of our outstanding common stock held by non-affiliates was approximately $16.9 million, which was calculated based on 14,137,138 shares of outstanding common stock, of which approximately 2,561,285 shares were held by affiliates, and a price per share of $1.46, which was the closing price of our common stock on the Nasdaq Capital Market on October 15, 2014. Pursuant to General Instruction I.B.6 of Form S-3, in no event will we sell securities registered on this registration statement in a public primary offering with a value exceeding more than one-third of the aggregate market value of our common stock held by non-affiliates in any 12-month period so long as the aggregate market value of our outstanding common stock held by non-affiliates remains below $75.0 million. During the 12 calendar months prior to and including the date of this prospectus, we offered and sold pursuant to General Instruction I.B.6 of Form S-3 (i) $6,669,257 of securities on November 1, 2013 and (ii) $7,096,757 of securities on February 7, 2014.

These are speculative securities. Investing in these securities involves significant risks. You should purchase these securities only if you can afford a complete loss of your investment. See Risk Factors beginning on page 6.

The securities offered by this prospectus may be sold directly by us to investors, through agents designated from time to time, or to or through underwriters or dealers, on a continuous or delayed basis. For additional information on the methods of sale, you should refer to the section entitled Plan of Distribution in this prospectus. If any agents or

underwriters are involved in the sale of any securities with respect to which this prospectus is being delivered, the names of such agents or underwriters and any applicable fees, commissions, discounts and over-allotment options will be set forth in a prospectus supplement. The price to the public of such securities and the net proceeds that we expect to receive from such sale will also be set forth in a prospectus supplement.

NEITHER THE SECURITIES AND EXCHANGE COMMISSION NOR ANY STATE SECURITIES COMMISSION HAS APPROVED OR DISAPPROVED OF THESE SECURITIES OR PASSED UPON THE ADEQUACY OR ACCURACY OF THIS PROSPECTUS. ANY REPRESENTATION TO THE CONTRARY IS A CRIMINAL OFFENSE.

Our principal executive offices are located at 12300 North Grant Street, Thornton, Colorado 80241.

The date of this prospectus is October 16, 2014

Table of Contents

TABLE OF CONTENTS

ABOUT THIS PROSPECTUS	1
PROSPECTUS SUMMARY	2
RISK FACTORS	6
FORWARD-LOOKING STATEMENTS	6
USE OF PROCEEDS	7
DILUTION	8
PLAN OF DISTRIBUTION	8
DESCRIPTION OF SECURITIES	9
EXPERTS	15
LEGAL MATTERS	16
INFORMATION INCORPORATED BY REFERENCE	16
WHERE YOU CAN FIND MORE INFORMATION	17
INDEMNIFICATION	17
DISCLOSURE OF COMMISSION POSITION ON INDEMNIFICATION OF SECURITIES ACT LIABILITIES	18

Table of Contents

ABOUT THIS PROSPECTUS

You should rely only on the information contained or incorporated by reference in this prospectus or a prospectus supplement. We have not authorized any other person to provide you with different information. If anyone provides you with different or inconsistent information, you should not rely on it. You should not assume that the information appearing in this prospectus, any prospectus supplement or any document incorporated by reference is accurate as of any date other than its date, regardless of the time of delivery of the prospectus or prospectus supplement or any sale of securities. Our business, financial condition, results of operations and prospects may have changed since those dates.

Table of Contents

PROSPECTUS SUMMARY

This summary highlights information contained in this prospectus. While we believe that this summary highlights some of the most important information about Ascent Solar Technologies, Inc. and this offering, you should read this entire prospectus and the documents incorporated by reference carefully, including Risk Factors, before deciding to invest in our securities. In this prospectus, references to we, us, our, Ascent, Ascent Solar or the Company mean Ascent Solar Technologies, Inc.

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.

Recent Strategic Developments

Introduction of EnerPlex Consumer Products

In February 2012, we began to reposition our business model with an immediate focus on developing downstream consumer products. In June 2012, we launched our EnerPlex line of consumer products, and introduced our first product, the Surfr , under the EnerPlex brand. The Surfr is 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.

Table of Contents

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, our 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 2013. 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 2013, we introduced the Surfr battery and solar case for the Samsung Galaxy S® 4, and in December 2013, we introduced the Surfr battery and solar case for Apple s iPhone® 5. In addition, we added an assortment of useful accessories to our product lines, 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. During 2014, we introduced the Jumpr Slate 10K and 5K, which are thin lithium polymer portable power banks.

We continue to aggressively pursue 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 currently have a total of 13 automated retail stores (kiosks) in operation. 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 of our products due to 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.

Suqian Joint Venture

On July 2, 2013, we entered into a framework agreement for the establishment of a joint venture (the 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 Suqian 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 and office space in the Suqian Economic and Industrial Development Science Park. The Joint Venture will build a 100MW factory over six years to manufacture our proprietary thin-film CIGS photovoltaic modules on flexible polyimide in addition to related consumer products.

We shall purchase the factory within the first 5 years at the initial construction cost, and shall also purchase Suqian s ownership interest in the Joint Venture within 5 years at 1.5 times of Suqian s cash investment.

In the initial phase of the project, we and Suqian will form the Joint Venture in which Suqian will inject approximately $4.8 million in cash and have majority interest of 75%. We shall contribute approximately $1.6

Table of Contents

million in cash and hold a minority interest of 25%. Subsequently, Suqian will further contribute 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 80% ownership.

Under the definitive agreement, Suqian will also provide a package of additional incentives including:

- A 5-year corporate tax holiday and a further 50% tax rebate over the following 5 years,
- Full rebate of value-added tax for the first 2 years and 50% rebate for the subsequent 3 years, and
- Free accommodations for up to 3 years for key scientists, engineers and management personnel of the Joint Venture.

As phase two of this program is implemented, we 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.

The implementation of the definitive agreement with Suqian, including the formation of the Joint Venture, 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.

Need for Additional Capital

Since inception, we have incurred significant losses. We expect to continue to incur net losses in the near term. For the year ended December 31, 2013, our cash used in operations was $20.3 million. At December 31, 2013, we had cash and equivalents of approximately $3.3 million. At June 30, 2014, we had cash and equivalents of $1.3 million.

We do not expect that sales revenue and cash flows will be sufficient to support operations and cash requirements until we have fully implemented our new consumer products strategy. In 2014, we expect to incur a base level of maintenance capital expenditures and relatively minor improvements to the existing asset base. Additional projected product revenues are not anticipated to result in a positive cash flow position for the year 2014 overall. We believe we will need to raise additional capital in order to continue our current level of operations in 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 are exploring opportunities to secure additional financing through strategic or financial investors, but there is no assurance that 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.

Going Concern Qualification

On March 28, 2014, we filed our Annual Report on Form 10-K with the Securities and Exchange Commission (the SEC), which Annual Report included our audited financial statements for the year ended December 31, 2013. The report of our independent registered public accounting firm on such financial statements contained an explanatory paragraph expressing substantial doubt regarding our ability to continue as a going concern.

The full text of the report of our independent registered public accounting firm is contained in our Annual Report on Form 10-K for the year ended December 31, 2013, which is incorporated by reference into this prospectus.

Table of Contents

Corporate Information

We are incorporated under the laws of Delaware. Our principal business office is located at 12300 North Grant Street, Thornton, Colorado 80241, and our telephone number is (720) 872-5000. Our website address is *www.ascentsolar.com*. Information contained on our website or any other website does not constitute part of this prospectus.

This Offering

Through this prospectus, we may from time to time offer and sell shares of our common stock, shares of our preferred stock, warrants, and the securities issuable upon exercise or conversion of any of those securities. We may offer and sell these securities separately or together as units, but the aggregate initial offering price will not exceed $25,000,000 or the equivalent amount denominated in one or more foreign currencies. Each time we offer and sell the securities, a prospectus supplement will be provided that will contain specific information about the terms of the offering, including the type(s), amount(s) and price(s) of the securities being offered and the plan of distribution employed.

Table of Contents

RISK FACTORS

An investment in our securities involves a high degree of risk and many uncertainties discussed in the section entitled Risk Factors in our annual report on Form 10-K for the year ended December 31, 2013, which is incorporated by reference into this prospectus. You should carefully consider the risk factors before purchasing our securities. If one or more of the possibilities described as risks actually occurs, our operating results and financial condition would likely suffer and the trading price of our securities could fall, causing you to lose some or all of your investment in the securities we are offering.

FORWARD-LOOKING STATEMENTS

This prospectus and the documents incorporated by reference into it contain forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended (the Securities Act), and Section 21E of the Securities Exchange Act of 1934, as amended (the Exchange Act). Forward-looking statements are those that predict or describe future events or trends and that do not relate solely to historical matters. You can generally identify forward-looking statements as statements containing the words believe, expect, may, will, could, would, ant intend, estimate, project, plan, continue, assume or other similar expressions, although not all forward-lookin statements contain these identifying words. All statements contained in this prospectus regarding our plans, objectives, goals, strategies, future events, future net sales or performance, capital expenditures, projected financial position, potential future revenues, projected costs, financing needs, plans or intentions relating to acquisitions, plans for the commercialization of our products, business trends and results that might be obtained by pursuing management s current plans and objectives are forward-looking statements. Forward-looking statements include, but are not necessarily limited to, those relating to:

- 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;

Table of Contents

Our ability to achieve profitability through our strategic alliance with TFG Radiant Investment Group Ltd. (TFG Radiant) in designing, manufacturing and selling products;

Our ability to successfully develop and maintain strategic relationships with key partners, including original equipment manufacturers (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 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.

You should not place undue reliance on our forward-looking statements because the matters they describe are subject to known and unknown risks, uncertainties and other unpredictable factors, many of which are beyond our control. Our forward-looking statements are based on the information currently available to us and speak only as of the date on the cover of this prospectus. New risks and uncertainties arise from time to time, and it is impossible for us to predict these matters or how they may affect us. Over time, our actual results, performance or achievements will likely differ from the anticipated results, performance or achievements that are expressed or implied by our forward-looking

statements, and such differences might be significant and materially adverse to our investors. We have no duty to, and do not intend to, update or revise the forward-looking statements in this prospectus after the date of this prospectus except to the extent required by the federal securities laws. You should consider all risks and uncertainties disclosed in our filings with the SEC described in the sections of this prospectus entitled Information Incorporated by Reference and Where You Can Find More Information, all of which are accessible on the SEC s website at www.sec.gov.

USE OF PROCEEDS

Unless otherwise indicated in the applicable prospectus supplement, we intend to use the net proceeds from the sale of any securities offered under this prospectus for general corporate purposes, including repayment and refinancing of debt, working capital and capital expenditures, research and development expenses, general and administrative expenses, or investment in technologies, products or assets that complement our business. We may temporarily invest the net proceeds in investment-grade and U.S. government interest-bearing securities until they are used for their stated purpose. We have not determined the amount of net proceeds to be used specifically for such purposes. As a result, management will retain broad discretion over the allocation of net proceeds. We may set forth additional information on the use of net proceeds from the sale of securities we offer under this prospectus in a prospectus supplement relating to the specific offering.

Table of Contents

DILUTION

If required by SEC rules, we will set forth in a prospectus supplement the following information regarding any material dilution of the equity interests of investors purchasing securities in an offering under this prospectus:

- the net tangible book value per share of our equity securities before and after the offering;
- the amount of the increase in such net tangible book value per share attributable to the cash payments made by purchasers in the offering; and
- the amount of the immediate dilution from the public offering price which will be absorbed by such purchasers.

PLAN OF DISTRIBUTION

We may sell the securities being offered hereby in one or more of the following ways from time to time:

- through dealers or agents to the public or to investors;
- to underwriters for resale to the public or to investors;
- directly to investors; or
- through a combination of such methods.

We may sell the securities at a fixed price or prices that may change, at prevailing market prices, at prices relating to prevailing market prices or at negotiated prices. Each time we sell securities in a particular offering, we will set forth in a prospectus supplement the terms of the offering of securities, including:

- the material terms of the distribution, including the number of shares and the consideration paid;
- the identity of any underwriters, dealers, agents or purchasers that will purchase the securities;
- the type and amount of any compensation, discounts or commissions to be received by underwriters, dealers or agents;

the purchase price of the securities being offered and the proceeds we will receive from the sale;

the nature of any transactions by underwriters, dealers or agents during the offering that are intended to stabilize or maintain the market price of our securities; and

the terms of any indemnification provisions.

Underwriters, dealers and agents that participate in the distribution of the securities may be deemed to be underwriters as defined in the Securities Act and any discounts or commissions they receive from us and any profit on their resale of the securities may be treated as underwriting discounts and commissions under the Securities Act. We will identify in the applicable prospectus supplement any underwriters, dealers or agents and will describe their compensation. We may have agreements with the underwriters, dealers and agents to indemnify them against specified civil liabilities, including liabilities under the Securities Act. Underwriters, dealers and agents may engage in transactions with or perform services for us in the ordinary course of their businesses.

Table of Contents

Certain persons that participate in the distribution of the securities may engage in transactions that stabilize, maintain or otherwise affect the price of the securities, including over-allotment, stabilizing and short-covering transactions in such securities, and the imposition of penalty bids, in connection with an offering. Certain persons may also engage in passive market-making transactions as permitted by Rule 103 of Regulation M. Passive market makers must comply with applicable volume and price limitations and must be identified as passive market makers. In general, a passive market maker must display its bid at a price not in excess of the highest independent bid for such security; if all independent bids are lowered below the passive market maker s bid, however, the passive market maker s bid must then be lowered when certain purchase limits are exceeded.

DESCRIPTION OF SECURITIES

Our authorized capital stock consists of 250,000,000 shares of common stock, $0.0001 par value, and 25,000,000 shares of preferred stock, $0.0001 par value. At a special meeting of stockholders to be held on October 22, 2014, the stockholders will be voting on an amendment to our certificate of incorporation. If the stockholders approve that amendment, our authorized shares of common stock will be reduced from 250,000,000 to 150,000,000. As of October 15, 2014, 750,000 shares have been designated as Series A Preferred Stock, 2,000 shares have been designated as Series B-1 Preferred Stock, 1,000 shares have been designated as Series B-2 Preferred Stock and 1,000 shares have been designated as Series C Preferred Stock. As of October 15, 2014, we had 14,137,138 shares of common stock (as adjusted to reflect a 1-for-10 reverse stock split of our common stock that occurred on August 26, 2014 (the Reverse Stock Split)), 212,390 shares of Series A Preferred Stock, no shares of Series B-1 Preferred Stock, no shares of Series B-2 Preferred Stock and 70 shares of Series C Preferred Stock outstanding.

The following is a summary of the rights of our common stock, preferred stock (including our Series A Preferred Stock and Series C Preferred Stock) and certain outstanding rights to obtain our common stock. It does not purport to be complete. For more detailed information about the terms of our capital stock, please see our Amended and Restated Certificate of Incorporation, as amended (our Certificate of Incorporation), including the certificates of designation for each of the Series A Preferred Stock, Series B Preferred Stock and Series C Preferred Stock, and our Second Amended and Restated Bylaws, as amended (our Bylaws).

Common Stock

Holders of our common stock are entitled to one vote for each share on all matters submitted to a stockholder vote and may not cumulate their votes. Holders of common stock are entitled to share in all dividends that our Board, in its discretion, declares from legally available funds. In the event of our liquidation, dissolution or winding up, each outstanding share entitles its holder to participate pro rata in all assets that remain after payment of liabilities and after providing for each class of stock, if any, having preference over the common stock.

Except for TFG Radiant, which holds pre-emptive rights with respect to certain equity issuances by us (on terms no less favorable than any such issuance) in order to maintain their percentage ownership in our common stock, no other holders of our common stock have any conversion, preemptive or other subscription rights, and there are no redemption provisions applicable to our common stock. The rights of the holders of common stock are subject to any rights that may be fixed for holders of preferred stock.

Preferred Stock

Our Board is authorized by our Certificate of Incorporation to establish classes or series of preferred stock and fix the designation, powers, preferences and rights of the shares of each such class or series and the qualifications, limitations or restrictions thereof without any further vote or action by our stockholders. Any shares of preferred stock so issued

could have priority over our common stock with respect to dividend or liquidation rights. Any future issuance of preferred stock may have the effect of delaying, deferring or preventing a change in our control without further action by our stockholders and may adversely affect the voting and other rights of the holders of our common stock.

Table of Contents

The issuance of shares of preferred stock, or the issuance of rights to purchase such shares, could be used to discourage an unsolicited acquisition proposal. For instance, the issuance of a series of preferred stock might impede a business combination by including class voting rights that would enable a holder to block such a transaction. In addition, under certain circumstances, the issuance of preferred stock could adversely affect the voting power of holders of our common stock. Although our Board is required to make any determination to issue preferred stock based on its judgment as to the best interests of our stockholders, our Board could act in a manner that would discourage an acquisition attempt or other transaction that some, or a majority, of our stockholders might believe to be in their best interests or in which such stockholders might receive a premium for their stock over the then market price of such stock.

Series A Preferred Stock

On June 17, 2013, we entered into a Securities Purchase Agreement (the Seow Purchase Agreement) with Seng Wei Seow (Seow), pursuant to which Seow agreed to purchase from us, and we agreed to sell to Seow (subject to the terms and conditions set forth therein), an aggregate of $6,000,000 of Series A Preferred Stock at a price of $8.00 per share of Series A Preferred Stock and warrants to purchase up to 262,500 shares of our common stock (as adjusted to reflect the Reverse Stock Split).

In connection with the Seow Purchase Agreement, we designated 750,000 shares of Series A Preferred Stock. The Series A Preferred Stock ranks senior to our common stock with respect to dividend rights, pari passu with respect to rights upon liquidation to our common stock, and junior to all existing and future indebtedness. Except as otherwise required by law (or with respect to approval of certain actions), the Series A Preferred Stock have no voting rights.

Holders of Series A Preferred Stock are entitled to cumulative dividends at a rate of 8.0% per annum (subject to adjustment in certain circumstances) when and if declared by the Board. We are obligated to pay certain make-whole amounts to the holders of Series A Preferred Stock, if the stock is redeemed or converted (as described below) prior to the fourth anniversary of its issuance date, in lieu of dividends that the stockholders would have otherwise received. The dividends and make-whole amounts (if any) may be paid in cash or in the form of common stock at the discretion of the Board.

We have the right to redeem all or a portion of the Series A Preferred Stock at any time at a redemption price of $8.00 per share, plus any accrued and unpaid dividends and plus the make-whole amount (if any).

The Series A Preferred Stock may be converted into shares of our common stock at any time at the option of the holder. In the event of a conversion by the holder, the price per share is equal to (a) Original Issue Price (as defined in the certificate of designation for the Series A Preferred Stock) multiplied by (b) the number of shares of Series A Preferred Stock shares being converted, divided by (c) the conversion price of $8.00 (as adjusted to reflect the Reverse Stock Split).

A conversion by us may be effected if certain Equity Conditions (as defined in the certificate of designation for the Series A Preferred Stock) are met and in the event that the closing price of our common stock exceeds 200% of the conversion price for any 20 consecutive trading days. In the event of a Company conversion, we shall issue the number of shares of common stock equal to (a) the Original Issue Price multiplied by (b) the number of shares of Series A Preferred Stock being converted, divided by (c) the conversion price of $8.00 (as adjusted to reflect the Reverse Stock Split).

Unless we have received the approval of the holders of a majority of the Series A Preferred Stock then outstanding, we shall not (i) alter or change adversely the powers, preferences or rights given to the Series A Preferred Stock or

alter or amend the certificate of designation for the Series A Preferred Stock, (ii) authorize or create any class of stock ranking as to distribution of dividends senior to the Series A Preferred Stock, (iii) amend

Table of Contents

our Certificate of Incorporation or other charter documents in breach of any of the provisions in the certificate of designation for the Series A Preferred Stock, (iv) increase the authorized number of shares of Series A Preferred Stock, or (v) enter into any agreement with respect to the foregoing.

Upon any liquidation, dissolution or winding up of the Company, after payment or provision for payment of our debts and other liabilities, 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.

In January 2014, our stockholders approved all issuances of shares of common stock in connection with the securities issued pursuant to the Seow Purchase Agreement pursuant to Nasdaq Listing Rule 5635(d).

Series B Preferred Stock

On October 28, 2013, we entered into a Stock Purchase Agreement with Ironridge Technology Co., a division of Ironridge Global IV, Ltd. (Ironridge) 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. We 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. Delivery of the second tranche of $5,000,000 in exchange for 500 shares of Series B-1 Preferred Stock occurred on February 7, 2014. All shares of Series B-1 Preferred Stock have been converted into common stock and no shares of Series B-1 Preferred Stock remain outstanding. The Company has never issued any shares of Series B-2 Preferred Stock. The Company does not intend to issue any shares of Series B-1 or B-2 Preferred Stock in the future.

Series C Preferred Stock

On April 1, 2014, we entered into a Stock Purchase Agreement (the Ironridge Purchase Agreement) with Ironridge pursuant to which we agreed to sell up to 600 shares of Series C Preferred Stock to Ironridge in up to two tranches. In the first tranche, on April 1, 2014, Ironridge purchased 300 shares of Series C Preferred Stock from us at a price of $10,000.00 per share of Series C Preferred Stock, which resulted in gross proceeds to us of $3,000,000. In the second tranche, on May 29, 2014, Ironridge purchased 300 shares of Series C Preferred Stock from us at a price of $10,000.00 per share of Series C Preferred Stock, which resulted in gross proceeds to us of $3,000,000.

On May 1, 2014, we issued 30 shares of our Series C Preferred Stock to Ironridge pursuant to the Registration Rights Agreement between us and Ironridge. In accordance with the Registration Rights Agreement, we filed an initial registration statement (the Initial Registration Statement) with the SEC registering 21,000,000 shares (2,100,000 as adjusted for the Reverse Stock Split) of our common stock which may be issued upon (i) conversion of the Series C Preferred Stock and (ii) our payment of dividends and make whole amounts (if any) on the Series C Preferred Stock. We were required to issue 30 additional shares of Series C Preferred Stock to Ironridge because the Initial Registration Statement was not declared effective by May 1, 2014.

The holders of the Series C Preferred Stock have no preemptive rights with respect to any of our stock or any securities convertible into or carrying rights or options to purchase any such stock. The Series C Preferred Stock is not subject to any sinking fund or other obligation of us to redeem or retire the Series C Preferred Stock, but we may redeem the Series C Preferred Stock as described below under Redemption . Unless redeemed or repurchased by us, the Series C Preferred Stock will have a perpetual term with no maturity.

The Series C Preferred Stock is not listed on any stock exchange or automated quotation system.

At no time will we issue shares of common stock in connection with the Series C Preferred Stock (whether upon conversion of Series C Preferred Stock, payment of dividends in common stock or payment of make-whole amounts in common stock) if such transaction (when aggregated with all other issuances in connection with the Series C Preferred Stock) would result in the issuance of more than 19.99% of the amount of our common stock issued and outstanding on the date of the Ironridge Purchase Agreement unless (i) the Company s stockholders shall

Table of Contents

have approved the issuance of shares of common stock in excess of 20%, or (ii) Nasdaq has provided a waiver of Listing Rule 5635(d). On May 22, 2014, at the Company s 2014 Annual Meeting of Stockholders, the Company s stockholders approved such issuance of shares of common stock in excess of 20% of our outstanding common stock in connection with the Series C Preferred Stock.

Rank

The Series C Preferred Stock, with respect to dividend rights and rights upon our liquidation, dissolution or winding up, ranks: (a) senior with respect to dividends to our common stock, (b) on a parity with respect to dividends with our existing Series A Preferred Stock, (c) on a parity with respect to rights upon liquidation with our common stock and our existing Series A Preferred Stock, and (d) junior to all of our existing and future indebtedness.

Dividends

Holders of the Series C Preferred Stock are entitled to dividends in the amount of 5.75% per annum, payable when, as and if declared by the Board in its discretion. The dividend rate on the Series C Preferred Stock is indexed to our stock price and subject to adjustment in certain circumstances.

The dividend rate on the Series C Preferred Stock shall adjust upward by 98.880 basis points for each $0.50 (as adjusted to reflect the Reverse Stock Split) that the volume weighted average price of our common stock on any trading day as of which the dividend rate is determined and calculated is below $10.00 (as adjusted to reflect the Reverse Stock Split), subject to a maximum dividend rate of 18%. The dividend rate on the Series C Preferred Stock shall adjust downward by 98.880 basis points for each $0.50 (as adjusted to reflect the Reverse Stock Split) that the volume weighted average price of our common stock on any trading day as of which the dividend rate is determined and calculated is above $13.00 (as adjusted to reflect the Reverse Stock Split), subject to a minimum dividend rate of 3%.

We have the option to pay dividends on the Series C Preferred Stock in cash or in additional shares of common stock. If we elect to pay in the form of common stock, the number of shares to be issued shall be calculated by using the lesser of 92% of (i) the volume weighted average price for the common stock over a 60 day measuring period or (ii) the lowest single day closing price for the common stock occurring during such measuring period.

Conversion

The Series C Preferred Stock will be convertible into common stock at a fixed conversion price of $11.50 (as adjusted to reflect the Reverse Stock Split) per share of common stock. The Series C Preferred Stock may be converted into shares of common stock at any time at the option of the holder. The Series C Preferred Stock may also be converted into shares of common stock at our option if the closing price of the common stock exceeds $23.00 (as adjusted to reflect the Reverse Stock Split) for 20 consecutive trading days.

In addition to the issuance of the applicable number of conversion shares, upon any conversion of Series C Preferred Stock, we will also pay to the holder an embedded dividend liability amount equal to the dividends (calculated at the then applicable dividend rate) on the converted Series C Preferred Stock for a full five year period from the date of issue (less any period for which dividends have previously been paid). Such embedded dividend liability amount may be paid in cash or, at our option, additional shares of common stock. If we elect to pay the embedded dividend liability amount in the form of common stock, the number of shares to be issued shall be calculated by using the lesser of (i) 92% of the volume weighted average price for the common stock over a 60 day measuring period or (ii) 92% of the lowest single day closing price for the common stock occurring during such measuring period.

12

Table of Contents

Redemption

Upon or after the fifth anniversary of the initial issuance date of the Series C Preferred Stock, we will have the right, at our option, to redeem for cash all or a portion of the Series C Preferred Stock at a price per share equal to $10,000 plus any accrued but unpaid dividends (the Series C Liquidation Value).

At any time prior to the fifth anniversary of the date of the initial issuance of Series C Preferred Stock, the Company will have the option to redeem for cash all or a portion of the Series C Preferred Stock at a price per share equal to (a) $10,000 plus (b) the embedded dividend liability amount equal to the dividends on the redeemed Series C Preferred Stock for a full five year period from the date of issue (less any period for which dividends have previously been paid).

Liquidation Value

Upon our liquidation, dissolution or winding up, holders of Series C Preferred Stock will be entitled to be paid out of our assets, on a parity with holders of our common stock and our Series A Preferred Stock, an amount equal to $10,000 per share plus any accrued but unpaid dividends thereon.

Voting Rights; Conversion; Transfer

Except as otherwise required by law (or with respect to approval of certain actions), the Series C Preferred Stock will not have voting rights.

Authorized but Unissued Shares

The authorized but unissued shares of common stock are available for future issuance without stockholder approval, unless otherwise required by law or applicable stock exchange rules. Additional authorized but unissued shares may be used for a variety of corporate purposes, including future public offerings to raise additional capital, corporate acquisitions and employee benefit plans. The existence of authorized but unissued shares could hinder or discourage an attempt to obtain control of us by means of a proxy contest, tender offer, merger or otherwise.

Warrants under the Seow Purchase Agreement

Under the Seow Purchase Agreement, we agreed to sell warrants (the Seow Warrants) to purchase up to 262,500 shares of our common stock at an exercise price of $9.00 per share of common stock (as adjusted to reflect the Reverse Stock Split). The Seow Warrants have a three year term until June 2016.

2005 Stock Option Plan

Our 2005 Stock Option Plan, as amended (the Option Plan), currently authorizes the grant of up to 370,000 shares of common stock (as adjusted to reflect the Reverse Stock Split and subject to further adjustment for stock splits and similar capital changes) in connection with incentive stock option grants and non-qualified stock option grants. Employees and, in the case of nonqualified stock options, directors, consultants or other service providers are eligible to receive grants under our plans. According to the terms of the Option Plan, no employee may be granted, in any fiscal year, options to purchase more than 12,500 shares or 25,000 shares during the initial year of service. As of October 15, 2014, there were 183,711 options vested or expected to vest in the future under our Option Plan. As of October 15, 2014, 70,297 shares remained available for future grant under our Option Plan.

At a special meeting of the Company s stockholders to be held on October 22, 2014, the stockholders will be voting on an amendment and restatement of the Option Plan. If the stockholders approve the amendment and restatement of the Option Plan, (i) the number of shares of common stock authorized for issuance under the Option Plan will be increased from 370,000 shares to 3,400,000 shares and (ii) employees may be granted, in any fiscal year, options to purchase up to 500,000 shares (as opposed to the current limit of 12,500 shares in any fiscal year or 25,000 shares during the initial year of service). If the stockholders do not approve the amendment and restatement of the Option Plan, the current Option Plan will remain in effect.

Table of Contents

2008 Restricted Stock Plan

Our 2008 Restricted Stock Plan, as amended (the Stock Plan), currently authorizes the grant of up to 455,000 shares of restricted common stock and restricted stock units (as adjusted to reflect the Reverse Stock Split and subject to further adjustment for stock splits and similar capital changes) to employees, directors, consultants or other service providers. According to the terms of the Stock Plan, no individual may be granted, in any fiscal year, more than 40,000 shares. Vesting of shares of restricted stock granted under the Stock Plan may occur over a specified period of time or based upon performance metrics announced at the time of grant. As of October 15, 2014, 58,891 restricted stock units were expected to vest in the future under the Stock Plan. As of October 15, 2014, 216,089 shares remained available for future grant under the Stock Plan.

At a special meeting of the Company s stockholders to be held on October 22, 2014, the stockholders will be voting on an amendment and restatement of the Stock Plan. If the stockholders approve the amendment and restatement of the Stock Plan, (i) the number of shares of common stock authorized for issuance under the Stock Plan will be increased from 455,000 shares to 1,500,000 shares and (ii) individuals may be granted, in any fiscal year, up to 200,000 shares (as opposed to the current limit of 40,000 shares in any fiscal year). If the stockholders do not approve the amendment and restatement of the Stock Plan, the current Stock Plan will remain in effect.

Registration Rights

Pursuant to a stockholders agreement between us and TFG Radiant, TFG Radiant holds certain registration rights related to its shares. We granted Seow certain registration rights in connection with the execution of the Seow Purchase Agreement. We granted Ironridge certain registration rights in connection with the execution of the Ironridge Purchase Agreement, which rights have been satisfied.

Anti-Takeover Effects of Certain Provisions of Delaware Law and Our Certificate of Incorporation and Bylaws

Our Certificate of Incorporation and Bylaws contain a number of provisions that could make our acquisition by means of a tender or exchange offer, a proxy contest or otherwise more difficult. These provisions are summarized below.

Removal of Directors. Our Bylaws provide that our directors may only be removed by the affirmative vote of the shares entitled to vote at an election of directors, or for cause by a majority of the Board. Although our Bylaws do not give the Board the power to approve or disapprove stockholder nominations for the election of directors or of any other business stockholders desire to conduct at an annual or any other meeting, the Bylaws may have the effect of precluding a nomination for the election of directors or precluding the conduct of business at a particular annual meeting if the proper procedures are not followed, or discouraging or deterring a third party from conducting a solicitation of proxies to elect its own slate of directors or otherwise attempting to obtain control, even if the conduct of that solicitation or attempt might be beneficial to our stockholders.

Staggered Board. Staggered terms tend to protect against sudden changes in management and may have the effect of delaying, deferring or preventing a change in our control without further action by our stockholders. Our Board is divided into three classes, with one class of directors elected at each year s annual stockholders meeting.

Special Meetings. Our Bylaws provide that special meetings of stockholders can be called by the President, at the request of a majority of the Board or at the written request of holders of at least 50% of the shares outstanding and entitled to vote.

Undesignated Preferred Stock. The ability to authorize undesignated preferred stock makes it possible for our Board to issue preferred stock with voting or other rights or preferences that could impede the success of any attempt to acquire us. These and other provisions may have the effect of deferring hostile takeovers or delaying changes in control or management of our Company.

Table of Contents

Delaware Anti-Takeover Statute. We are subject to the provisions of Section 203 of the Delaware General Corporation Law regulating corporate takeovers. In general, Section 203 prohibits a publicly held Delaware corporation from engaging under certain circumstances in a business combination with an interested stockholder for a period of three years following the date the person became an interested stockholder unless:

- Prior to the date of the transaction that resulted in the stockholder becoming an interested stockholder, the board of directors of the corporation approved either the business combination or the transaction which resulted in the stockholder becoming an interested stockholder.

- Upon completion of the transaction that resulted in the stockholder becoming an interested stockholder, the stockholder owned at least 85% of the voting stock of the corporation outstanding at the time the transaction commenced, excluding for purposes of determining the number of shares outstanding (1) shares owned by persons who are directors and also officers and (2) shares owned by employee stock plans in which employee participants do not have the right to determine confidentially whether shares held subject to the plan will be tendered in a tender or exchange offer.

- On or subsequent to the date of the transaction that resulted in the stockholder becoming an interested stockholder, the business combination is approved by the board and authorized at an annual or special meeting of stockholders, and not by written consent, by the affirmative vote of at least 66 2/3% of the outstanding voting stock which is not owned by the interested stockholder.

Generally, a business combination includes a merger, asset or stock sale, or other transaction resulting in a financial benefit to the interested stockholder. An interested stockholder is a person who, together with affiliates and associates, owns or, within three years prior to the determination of interested stockholder status, did own 15% or more of a corporation s outstanding voting securities. We expect the existence of this provision to have an anti-takeover effect with respect to transactions our Board does not approve in advance. We also anticipate that Section 203 may also discourage attempts that might result in a premium over the market price for the shares of common stock held by stockholders.

The provisions of Delaware law, our Certificate of Incorporation and our Bylaws could have the effect of discouraging others from attempting hostile takeovers and, as a consequence, they may also inhibit temporary fluctuations in the market price of our common stock that often result from actual or rumored hostile takeover attempts. These provisions may also have the effect of preventing changes in our management. It is possible that these provisions could make it more difficult to accomplish transactions that stockholders may otherwise deem to be in their best interests.

Listing

Our common stock is listed on the Nasdaq Capital Market under the trading symbol ASTI.

Transfer Agent and Registrar

The transfer agent and registrar of our common stock is Computershare Investor Services.

EXPERTS

The financial statements in our Annual Report on Form 10-K for the year ended December 31, 2013 have been audited by Hein & Associates LLP, an independent registered public accounting firm, to the extent and for the periods set forth in their report, and are incorporated in this prospectus by reference in reliance upon such report and upon the authority of such firm as experts in accounting and auditing.

Table of Contents

LEGAL MATTERS

The validity of the securities offered hereby will be passed on by Faegre Baker Daniels LLP, Boulder, Colorado.

INFORMATION INCORPORATED BY REFERENCE

This prospectus is part of a registration statement on Form S-3. The SEC allows this filing to incorporate by reference information that we previously have filed with the SEC. This means we can disclose important information to you by referring you to other documents that we have filed with the SEC. The information that is incorporated by reference is considered part of this prospectus, and information that we file later will automatically update and may supersede this information. For further information about us and the securities being offered, you should refer to the registration statement and the following documents that are incorporated by reference:

- Our annual report on Form 10-K filed on March 28, 2014, which contains audited financial statements for the fiscal year ended December 31, 2013;
- Our definitive proxy statements on Schedule 14A filed on April 25, 2014 and September 26, 2014;
- Our quarterly report on Form 10-Q filed on May 7, 2014 for the quarter ended March 31, 2014;
- Our quarterly report on Form 10-Q filed on August 13, 2014 for the quarter ended June 30, 2014;
- Our current reports on Form 8-K filed on January 2, 2014, January 24, 2014, February 11, 2014, March 21, 2014, March 27, 2014, April 2, 2014, April 9, 2014, April 22, 2014, May 29, 2014, July 21, 2014, July 31, 2014, September 2, 2014, September 4, 2014 and September 16, 2014;
- All other reports filed by us pursuant to Section 13(a) or 15(d) of the Exchange Act since the end of the fiscal year covered by the annual report referred to above; and
- The description of our common stock contained in Forms 8-A filed on June 19, 2006 and August 8, 2006 and any amendments or reports filed for the purpose of updating such description.

All documents filed by the Company subsequent to those listed above with the SEC pursuant to Section 13(a), 13(c), 14 or 15(d) of the Exchange Act, prior to the termination of the offering, shall be deemed to be incorporated by reference into this prospectus and to be a part hereof from the date of filing of such documents. Any statement contained in a document incorporated by reference herein shall be deemed to be modified or superseded for purposes of this prospectus to the extent that a statement contained herein or in any other subsequently filed document which also is or is deemed to be incorporated by reference herein modifies or supersedes such statement. Any statement so modified or superseded shall not be deemed, except as so modified or superseded, to constitute a part of this prospectus.

Our filings with the SEC, including our annual report on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K and amendments to those reports, are available free of charge on our website at http://www.ascentsolar.com as soon as reasonably practicable after they are filed with, or furnished to, the SEC. You may request a copy of all documents that are incorporated by reference in this prospectus by writing or telephoning us at the following address and telephone number: Ascent Solar Technologies, Inc., Attention: Corporate Secretary, 12300 North Grant Street, Thornton, Colorado 80241, telephone (720) 872-5000. We will provide copies of all documents requested (not including exhibits to those documents, unless the exhibits are specifically incorporated by reference into those documents or this prospectus) without charge.

Table of Contents

WHERE YOU CAN FIND MORE INFORMATION

This prospectus is part of a registration statement on Form S-3 filed with the SEC under the Securities Act. This prospectus does not contain all the information set forth in the registration statement because certain information has been incorporated into the registration statement by reference in accordance with the rules and regulations of the SEC. Please review the documents incorporated by reference for a more complete description of the matters to which such documents relate.

We are subject to the information reporting requirements of the Exchange Act. In accordance with the Exchange Act, we file reports, proxy statements, and other information with the SEC. You can inspect and copy these reports, proxy statements, and other information at the Public Reference Room of the SEC, 100 F Street, N.E., Washington, D.C. 20549, at prescribed rates. Please call the SEC at 1-800-SEC-0330 for further information on the operation of the public reference rooms. Our SEC filings are also available on the SEC s web site. The address of this site is http://www.sec.gov.

INDEMNIFICATION

Our Certificate of Incorporation contains provisions that limit the liability of our directors for monetary damages to the fullest extent permitted by Delaware law. Consequently, our directors will not be personally liable to stockholders for monetary damages for any breach of fiduciary duties as directors, except liability for the following:

Any breach of their duty of loyalty to our Company or our stockholders;

Acts or omissions not in good faith or which involve intentional misconduct or a knowing violation of law;

Unlawful payments of dividends or unlawful stock repurchases or redemptions as provided in Section 174 of the Delaware General Corporation Law; and

Any transaction from which the director derived an improper personal benefit.

Our Bylaws provide that we are required to indemnify our directors and officers and may indemnify our employees and other agents to the fullest extent permitted by Delaware law. Our Bylaws also provide that we shall advance expenses incurred by a director or officer before the final disposition of any action or proceeding upon receipt of an undertaking from or on behalf of that director or officer to repay the advance if it is ultimately determined that he or she is not entitled to be indemnified. We have entered and expect to continue to enter into agreements to indemnify our directors, executive officers and other employees as determined by the Board. These agreements provide for indemnification for related expenses including attorneys fees, judgments, fines and settlement amounts incurred by any of these individuals in any action or proceeding. We believe that these provisions and indemnification agreements are necessary to attract and retain qualified persons as directors and officers. We also maintain directors and officers liability insurance.

The limitation of liability and indemnification provisions in our Certificate of Incorporation and Bylaws may discourage stockholders from bringing a lawsuit against our directors for breach of their fiduciary duty. They may also reduce the likelihood of derivative litigation against our directors and officers, even though an action, if successful,

might benefit us and other stockholders. Furthermore, a stockholder s investment may be adversely affected to the extent that we pay the costs of settlement and damage awards against directors and officers as required by these indemnification provisions. At present, there is no pending litigation or proceeding involving any of our directors, officers or employees for which indemnification is sought, and we are not aware of any threatened litigation that may result in claims for indemnification.

Table of Contents

DISCLOSURE OF COMMISSION POSITION ON

INDEMNIFICATION OF SECURITIES ACT LIABILITIES

Insofar as indemnification for liabilities arising under the Securities Act may be permitted to directors, officers or persons controlling us pursuant to the foregoing provisions, we have been informed that in the opinion of the SEC such indemnification is against public policy as expressed in the Securities Act and is therefore unenforceable.