Ascent Solar Technologies, Inc.
Form S-1
September 05, 2014
**Table of Contents**

**As filed with the Securities and Exchange Commission on September 5, 2014**

**Registration No. 333-**

**UNITED STATES**

**SECURITIES AND EXCHANGE COMMISSION**

**Washington, D.C. 20549**

# FORM S-1

**REGISTRATION STATEMENT**

***UNDER***

***THE SECURITIES ACT OF 1933***

**ASCENT SOLAR TECHNOLOGIES, INC.**

**(Exact name of registrant as specified in its charter)**

| **Delaware** | **3674** | **20-3672603** |
|---|---|---|
| **(State or other jurisdiction of incorporation or organization)** | **(Primary Standard Industrial Classification Code Number)** | **(I.R.S. Employer Identification Number)** |

**12300 North Grant Street**

**Thornton, Colorado 80241**

**(720) 872-5000**

**(Address, including zip code, and telephone number, including area code, of registrant s principal executive offices)**

**William M. Gregorak**

**Ascent Solar Technologies, Inc.**

**12300 North Grant Street**

**Thornton, Colorado 80241**

**(720) 872-5000**

**(Name, address, including zip code, and telephone number, including area code, of agent for service)**

***Copies to:***

**James H. Carroll**

**Faegre Baker Daniels LLP**

**1470 Walnut Street, Suite 300**

**Boulder, Colorado 80302**

**(303) 447-7700**

**Approximate date of commencement of proposed sale to the public:** From time to time after this registration statement becomes effective as determined by market conditions and other factors.

If any of the securities being registered on this Form are to be offered on a delayed or continuous basis pursuant to Rule 415 under the Securities Act of 1933, check the following box: x

If this Form is filed to register additional securities for an offering pursuant to Rule 462(b) under the Securities Act, please check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering: ¨

If this Form is a post-effective amendment filed pursuant to Rule 462(c) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering. ¨

If this Form is a post-effective amendment filed pursuant to Rule 462(d) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering. ¨

Table of Contents

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

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

**CALCULATION OF REGISTRATION FEE**

| Title of Each Class of Securities to be Registered | Amount to be Registered(1) | Proposed Maximum Offering Price Per Share(2) | Proposed Maximum Aggregate Offering Price | Amount of Registration Fee |
|---|---|---|---|---|
| Common Stock, par value $0.0001 | 1,000,000 shares | $2.716 | $2,716,000 | $349.83 |

(1) Pursuant to Rule 416 under the Securities Act of 1933, as amended, this registration statement also covers such additional shares as may hereafter be offered or issued to prevent dilution resulting from stock splits, stock dividends, recapitalizations or certain other capital adjustments.

(2) Estimated solely for purposes of calculating the registration fee pursuant to Rule 457(c) under the Securities Act of 1933, as amended, using the average of the high and low prices as reported on the NASDAQ Capital Market on September 4, 2014, which was $2.716 per share.

**The Registrant hereby amends this registration statement on such date or dates as may be necessary to delay its effective date until the Registrant shall file a further amendment which specifically states that this registration statement shall thereafter become effective in accordance with Section 8(a) of the Securities Act of 1933, as amended, or until the registration statement shall become effective on such date as the Securities and Exchange Commission, acting pursuant to said Section 8(a), may determine.**

Table of Contents

Explanatory Note:

The registrant previously registered 2,100,000 (as adjusted for the registrant s 1-for-10 reverse stock split which became effective on August 26, 2014) shares of common stock issuable upon conversion and otherwise in connection with the registrant s Series C Preferred Stock. Such previous registration statement (333-195136) was declared effective on May 27, 2014. The registrant is registering an additional 1,000,000 shares on this registration statement because the number of shares issuable in connection with the remaining outstanding shares of Series C Preferred Stock exceeds the 2,100,000 shares previously registered.

Table of Contents

**The information in this prospectus is not complete and may be changed. These securities may not be sold until the related registration statement filed with the Securities and Exchange Commission is effective. This prospectus is not an offer to sell these securities and it is not soliciting an offer to buy these securities in any state where the offer or sale is not permitted.**

**SUBJECT TO COMPLETION, DATED SEPTEMBER 5, 2014**

**PROSPECTUS**

# ASCENT SOLAR TECHNOLOGIES, INC.

**1,000,000 shares of common stock**

The selling stockholder named in this prospectus is offering to sell up to 1,000,000 shares of common stock of Ascent Solar Technologies, Inc. We will not receive any proceeds from the resale of shares of our common stock by the selling stockholder.

This prospectus includes 1,000,000 shares of common stock issuable upon the conversion of shares of our Series C Preferred Stock issued to the selling stockholder and shares of common stock that we may issue to the selling stockholder if we choose to pay dividends and make whole amounts on the Series C Preferred Stock in the form of common stock rather than cash.

Our common stock is traded on the Nasdaq Capital Market under the symbol ASTI. On September 4, 2014, the last reported sale price of our common stock on the Nasdaq Capital Market was $2.62 per share.

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

**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 5.**

The selling stockholder is offering these shares of common stock. The selling stockholder may sell all or a portion of these shares from time to time in market transactions through any market on which our common stock is then traded, in negotiated transactions or otherwise, and at prices and on terms that will be determined by the then prevailing market price or at negotiated prices directly or through a broker or brokers, who may act as agent or as principal or by a combination of such methods of sale. The selling stockholder will receive all proceeds from the sale of the common stock. For additional information on the methods of sale, you should refer to the section entitled Plan of Distribution.

**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.**

**The date of this prospectus is [ ], 2014**

Table of Contents

## TABLE OF CONTENTS


| | |
|---|---|
| ABOUT THIS PROSPECTUS | 1 |
| PROSPECTUS SUMMARY | 1 |
| THE OFFERING | 4 |
| FORWARD-LOOKING STATEMENTS | 5 |
| RISK FACTORS | 6 |
| USE OF PROCEEDS | 18 |
| SELLING STOCKHOLDER | 18 |
| DESCRIPTION OF CAPITAL STOCK | 19 |
| PLAN OF DISTRIBUTION | 25 |
| EXPERTS | 27 |
| LEGAL MATTERS | 27 |
| INFORMATION INCORPORATED BY REFERENCE | 27 |
| WHERE YOU CAN FIND MORE INFORMATION | 28 |
| INDEMNIFICATION | 28 |
| DISCLOSURE OF COMMISSION POSITION ON INDEMNIFICATION OF SECURITIES ACT LIABILITIES | 29 |
| DEALER PROSPECTUS DELIVERY OBLIGATION | 29 |

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.

## 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 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.

Table of Contents

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 during 2014 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 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.

Table of Contents

## THE OFFERING

On April 1, 2014, we entered into a Stock Purchase Agreement (the Stock Purchase Agreement ) with Ironridge Technology Co., a division of Ironridge Global IV, Ltd. (the Selling Stockholder ). The Stock Purchase Agreement provided for sales of our Series C preferred stock (the Series C Preferred Stock ) by us to the Selling Stockholder in up to two tranches.

In the first tranche, the Selling Stockholder agreed to purchase from us, and we agreed to sell to the Selling Stockholder (subject to the terms and conditions set forth therein), 300 shares of Series C Preferred Stock at a price of $10,000 per share of Series C Preferred Stock. The closing of the first tranche took place on April 1, 2014 and resulted in gross proceeds to us of $3,000,000. In the second tranche, the Selling Stockholder purchased an additional 300 shares of Series C Preferred Stock from us at a price of $10,000 per share of Series C Preferred Stock. The closing of the second tranche took place on May 29, 2014 and resulted in gross proceeds to us of $3,000,000. The second tranche closed after our stockholders approved the issuances of our shares related to the Series C Preferred Stock on May 22, 2014 in accordance with Nasdaq Listing Rule 5635(d), which requires stockholders to approve certain stock issuances that may aggregate to 20% or more of our outstanding common stock.

The Series C Preferred Stock is convertible into common stock at a fixed conversion price of $11.50 per share of common stock, as further described in the Description of Capital Stock Series C Preferred Stock section of this prospectus. The fixed conversion price has been adjusted to reflect a 1-for-10 reverse stock split of our common stock that occurred on August 26, 2014 (the Reverse Stock Split ).

In connection with the Stock Purchase Agreement, we filed a Certificate of Designations of Preferences, Rights and Limitations of Series C Preferred Stock ( Certificate of Designations ) with the Secretary of State of the State of Delaware. The terms of the Series C Preferred Stock are summarized in the Description of Capital Stock Series C Preferred Stock section of this prospectus.

In connection with the Stock Purchase Agreement, we entered into a Registration Rights Agreement (the Registration Rights Agreement ), pursuant to which we agreed to register with the SEC the shares of common stock issuable in connection with the Stock Purchase Agreement, including common stock issuable (i) upon conversion of the shares of Series C Preferred Stock and (ii) in connection with the payment of dividends and make-whole amounts (if any) in the event that we elect to pay such amounts in the form of common stock rather than cash. On May 27, 2014, a registration statement (the Initial Registration Statement ) filed by us with the SEC registering 21,000,000 shares (2,100,000 as adjusted for the Reverse Stock Split) of common stock issuable to the Selling Stockholder in connection with the Series C Preferred Stock became effective. The Registration Rights Agreement provided that, if the Initial Registration Statement was not declared effective on or before (i) the 30th day after April 1, 2014, we would be required to issue 30 additional shares of Series C Preferred Stock to the Selling Stockholder; (ii) the 60th day after April 1, 2014, we would be required to issue 30 additional shares of Series C Preferred Stock to the Selling Stockholder; and (iii) the 90th day after April 1, 2014, we would be required to issue 30 additional shares of Series C Preferred Stock to the Selling Stockholder. Since the Initial Registration Statement was not declared effective within 30 days of April 1, 2014, we issued 30 additional shares of Series C Preferred Stock to the Selling Stockholder on May 1, 2014.

As of September 4, 2014, the Selling Stockholder has converted 460 shares of Series C Preferred Stock, resulting in the issuance of 2,037,733 shares (as adjusted to reflect the Reverse Stock Split) of our common stock (including the payment of make-whole dividends in the form of shares). Accordingly, shares of common stock that may be issued on the remaining outstanding shares of Series C Preferred Stock will exceed the 2,100,000 common shares covered by the Initial Registration Statement. As of September 4, 2014, 170 shares of Series C Preferred Stock remain

outstanding.

This prospectus includes 1,000,000 shares of common stock (as adjusted to reflect the Reverse Stock Split) that are issuable upon conversion of the remaining 170 outstanding shares of Series C Preferred Stock (including shares of common stock we may issue to the Selling Stockholder if we choose to pay dividends and make whole amounts on the Series C Preferred Stock in the form of common stock rather than cash).

Table of Contents

| | |
|---|---|
| Common stock outstanding prior to the offering | 13,428,259* |
| Common stock offered by the Selling Stockholder | 1,000,000** |
| Common stock to be outstanding after the offering | 14,428,259** |
| Use of proceeds | We will not receive any proceeds from the sale of the securities hereunder. See Use of Proceeds for a complete description. |

* As of September 1, 2014.

** Assumes (i) the conversion of the remaining 170 outstanding shares of Series C Preferred Stock that were issued under the Stock Purchase Agreement, and (ii) we elect to pay dividends and make-whole amounts (if any) on the Series C Preferred Stock issued under the Stock Purchase Agreement in the form of common stock, rather than cash.

## 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;

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;

Table of Contents

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.

## 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.

**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;

Table of Contents

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 Joint Venture with Suqian 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;

we effectively manage the planned ramp up of our operations;

we successfully develop and maintain strategic relationships with key partners, including OEMs, system integrators and distributors, retailers and e-commerce companies, who deal directly with end users in our target markets;

our ability to maintain the listing of our common stock on the NASDAQ 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

the 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 $27.3 million for the six months ended June 30, 2014. We reported an accumulated deficit of $275.1 million as of June 30, 2014. 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.

Table of Contents

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

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

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

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

Table of Contents

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

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

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

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

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

**Our continuing operations may require additional capital in the future 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 in 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

Table of Contents

pressures could be significantly limited, and our business, results of operations and financial condition could be materially and adversely affected. If our revenues do not increase rapidly, and/or additional financing is not obtained, we will be required to significantly curtail operations to reduce costs and/or sell assets. Such actions would likely have an adverse impact on our future operations.

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

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

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

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

Our target markets include consumer electronics, portable power, defense, transportation, space and near space, and building applied photovoltaic ( BAPV ) and building integrated photovoltaic ( BIPV ) markets. 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.

10

Table of Contents

**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.

**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 September 4, 2014, TFG Radiant owned approximately 18.33% of our common stock. If the second tranche of the pending August 29, 2014 financing transaction closes, TFG Radiant s ownership would increase to approximately

26.2%. 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 between us and TFG Radiant. TFG Radiant also has certain registration rights that could impact shareholders. Additionally, TFG Radiant currently holds two seats on our Board of Directors (the Board ), which affords TFG Radiant greater control and influence over matters affecting our business.

Table of Contents

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.

**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.

Table of Contents

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

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

The PV industry is characterized by the existence of a large number of patents and frequent litigation based on allegations of patent infringement. We are aware of numerous issued patents and pending patent applications owned by third parties that may relate to current and future generations of solar energy. The owners of these patents may assert the manufacture, use or sale of any of our products infringes one or more claims of their patents. Moreover, because patent applications can take many years to issue, there may be currently pending applications, unknown to us, which may later result in issued patents that materially and adversely affect our business. Third parties could also assert claims against us that we have infringed or misappropriated their intellectual property rights. Whether or not such claims are valid, we cannot be certain we have not infringed the intellectual property rights of such third parties. Any infringement or misappropriation claim could result in significant costs or substantial damages to our business or an inability to manufacture, market or sell any of our PV modules found to infringe or misappropriate. Even if we were to prevail in any such action, the litigation could result in substantial cost and diversion of resources that could materially and adversely affect our business. The large number of patents, the rapid rate of new patent issuances, the complexities of the technology involved and uncertainty of litigation increase the risk of business assets and management s attention being diverted to patent litigation. Even if obtaining a license were feasible, it could be costly and time consuming. We might be forced to obtain additional licenses from our existing licensors in the event the scope of the intellectual property we have licensed is too narrow to cover our activities, or in the event the licensor did not have sufficient rights to grant us the license(s) purported granted. Also, some of our licenses may restrict or limit our ability to grant sub-licenses and/or assign rights under the licenses to third parties, which may limit our ability to pursue business opportunities.

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

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.

Table of Contents

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

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

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

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

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

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

- difficulty with staffing and managing widespread operations;

- 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.

Table of Contents

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

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

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

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

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

Table of Contents

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.

**Due to our lack of compliance with the minimum bid price rule of the NASDAQ Global Market, our stock listing was transferred to the NASDAQ Capital Market in March 2014 and, if we are unable to regain compliance with the minimum bid price rule, our stock could be delisted, which could limit the liquidity of our stock, increase its volatility and hinder our ability to raise capital.**

Under the rules of the NASDAQ Stock Market, listed companies are required to maintain a share bid price of at least $1.00 per share and if the closing share bid price stays below $1.00 for a period of 30 consecutive business days, then the listed company has a cure period of at least 180 days for the purpose of regaining compliance with the $1.00 per share bid price minimum. As reported in our Current Report on Form 8-K filed on September 23, 2013, we received notice from the NASDAQ Stock Market that we were not in compliance with the minimum bid price rule.

As reported in our Current Report on Form 8-K filed on March 21, 2014, our share price did not sustain an increase sufficient for us to re-gain compliance during the relevant cure period ending on March 18, 2014. We received notice from the Listing Qualifications Staff of the NASDAQ Stock Market on March 19, 2014 that our securities were subject to delisting from the NASDAQ Global Market tier unless the Company requested a hearing before the NASDAQ Listing Qualifications Panel or successfully transferred its listing to the NASDAQ Capital Market tier. As reported in our Current Report on Form 8-K filed on March 27, 2014, we received approval from NASDAQ on March 26, 2014 to transfer our stock listing to the NASDAQ Capital Market, effective with the opening of the market on March 28, 2014.

In connection with the transfer of our stock listing, we have been granted an additional 180 days, or until September 15, 2014, to regain compliance with the minimum bid price requirement by having a closing bid price of

our common stock of at least $1.00 per share for at least ten consecutive business days. On August 26, 2014, we effected the Reverse Stock Split to increase the trading price of our common stock to satisfy the $1.00 per share minimum bid price requirement. If our common stock does not trade for at least ten consecutive business days at a level that is likely to regain compliance with the NASDAQ requirements, we may be subject to de-listing procedures.

Table of Contents

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

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

**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, in the calendar year ended December 31, 2013, the closing price of our common stock traded (as adjusted for the Reverse Stock Split) as low as $5.20 and as high as $11.60. From January 1, 2014 through September 4, 2014, the closing price of our common stock has traded (as adjusted for the Reverse Stock Split) as high as $7.448 and as low as $1.82. 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.

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

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

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

The conversion of our outstanding Series A and Series C preferred stock would result in the future issuance of significant additional shares of common stock by the Company. In addition, an indeterminate number of additional common shares may be issued in the event the Company elects to pay dividends and make-whole amounts (if any) due on the Series A and Series C preferred stock in the form of shares rather than cash. The dividend rates on the Series A and Series C preferred stock are indexed to our stock price so that the dividend rate increases if our stock price declines. To the extent we issue common stock in payment of the make-whole amounts (if any) for conversion or

redemption of the Series A and Series C preferred stock, or elect to pay dividends on the Series A and Series C preferred stock in the form of our common stock, rather than cash, such issuances will dilute the ownership interests of existing stockholders.

As of September 4, 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, we estimate that we would issue 212,390 common shares upon conversion and 325,502 additional common shares for make-whole amounts paid in common shares in lieu of cash (all common shares as adjusted to reflect the Reverse Stock Split).

Table of Contents

As of September 4, 2014, 170 shares of Series C preferred stock remained outstanding. If all remaining shares of Series C preferred stock were immediately converted as of the date of this prospectus, we estimate that we would issue 147,826 common shares upon conversion and 913,760 additional common shares for make-whole amounts paid in common shares in lieu of cash (all common shares as adjusted to reflect the Reverse Stock Split).

**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 Amended and Restated Certificate of Incorporation and Second Amended and Restated Bylaws, each as amended, 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 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.

## USE OF PROCEEDS

This prospectus relates to shares of our common stock that may be offered and sold from time to time by the Selling Stockholder. We will not receive any of the proceeds resulting from the sale of common stock by the Selling Stockholders.

## SELLING STOCKHOLDER

Below is information with respect to the beneficial ownership of our securities by the Selling Stockholder as of September 5, 2014, which has been adjusted to reflect the Reverse Stock Split. Except as described below, the Selling

Stockholder does not have, and has not had, any position, office or other material relationship with us or any of our affiliates beyond the Selling Stockholder s investment in, or receipt of, our securities, during the past three years. The Selling Stockholder is not a broker-dealer or affiliate of a broker-dealer. See Plan of Distribution for additional information about the Selling Stockholder and the manner in which the Selling Stockholder may dispose of its shares. Beneficial ownership has been determined in accordance with the rules of the SEC, and generally means that a person has beneficial ownership of a security if he, she or it possesses sole or shares voting or investment power of that security, and includes options that are currently exercisable or exercisable within 60 days. Our registration of these securities does not necessarily mean that the Selling Stockholder will sell any or all of the securities covered by this prospectus. The percentage for the Selling Stockholder is based on 13,428,259 outstanding shares of common stock as of September 4, 2014, plus the additional shares that the Selling Stockholder is deemed to beneficially own as set forth in the table.

Table of Contents

The Selling Stockholder may sell some or none of its securities in this offering. See Plan of Distribution.

| Name and Address of Selling Stockholder | Number of Shares of Common Stock Beneficially Owned Prior to the Offering | Number of Shares of Common Stock Offered Pursuant to this Prospectus | Number of Shares of Common Stock Owned after the Offering | Percentage of Shares of Common Stock Owned after the Offering |
|---|---|---|---|---|
| Ironridge Technology Co., a division of Ironridge Global IV, Ltd. (1) | 1,061,586(2) | 1,000,000(3) | 61,586(2) | 0.4% |

(1) The address of the Selling Stockholder is Harbour House, 2nd Floor, Waterfront Drive, Road Town, Tortola, British Virgin Islands VG1110. The Series C preferred securities held by the Selling Stockholder contain conversion and issuance limitations providing that the Selling Stockholder may not be issued shares of common stock (whether by means of conversion of Series C preferred stock, exercise of warrants or otherwise) if after giving effect to such issuance the Selling Stockholder would beneficially own in excess of 9.9% of the Company s outstanding shares of common stock. In addition, for so long as the Selling Stockholder or its affiliates holds any common shares, it is contractually prohibited from voting any shares of our common stock.

(2) Consists of (i) 147,826 shares of common stock issuable upon conversion of 170 outstanding shares of Series C preferred stock, and (ii) an estimated 913,760 shares of common stock which would be currently issuable as payment in lieu of cash for dividends or make-whole amounts (if any) on the conversion of such Series C preferred stock.

(3) Represents 1,000,000 shares of common stock (i) issuable upon conversion of the remaining 170 shares of Series C preferred stock issued under the Stock Purchase Agreement and (ii) that may be issued from time to time in the event that we elect to pay dividends or make-whole amounts (if any) on such Series C preferred stock in the form of common stock, rather than cash.

## DESCRIPTION OF CAPITAL STOCK

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. As of September 4, 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 September 4, 2014, we had 13,428,259 shares of common stock, 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 170 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.

Table of Contents

**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.

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).

Table of Contents

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).

**Series B Preferred Stock**

On October 28, 2013, we entered into a Stock Purchase Agreement with the Selling Stockholder 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 the Stock Purchase Agreement with the Selling Stockholder pursuant to which we agreed to sell up to 600 shares of Series C Preferred Stock to the Selling Stockholder in up to two tranches. In the first tranche, on April 1, 2014, the Selling Stockholder 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, the Selling Stockholder 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 the Selling Stockholder pursuant to the Registration Rights Agreement between us and the Selling Stockholder. In accordance with the Registration Rights Agreement, we filed the Initial Registration Statement with the SEC registering 21,000,000 shares (2,100,00 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 the Selling Stockholder 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.

Table of Contents

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

At no time will the Company 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 common stock of the Company issued and outstanding on the date of the Stock Purchase Agreement unless (i) the Company s stockholders shall 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 the Company s 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, Series B-1 Preferred Stock and Series B-2 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

Table of Contents

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.

*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 September 4, 2014, there were 180,170 options vested or expected to vest in the future under our Option Plan.

Table of Contents

**2008 Restricted Stock Plan**

Our 2008 Restricted Stock Plan, as amended (the Stock Plan ), currently authorizes the grant of up to 255,000 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 20,000 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 September 4, 2014, 59,559 restricted stock units were expected to vest in the future under the Stock Plan. As of September 4, 2014, 192,646 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 the Selling Stockholder certain registration rights in connection with the execution of the Stock Purchase Agreement.

**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.

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.

Table of Contents

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.

## PLAN OF DISTRIBUTION

The Selling Stockholder of the common stock and any of its pledgees, assignees and successors-in-interest may, from time to time, sell any or all of their shares of common stock on the NASDAQ Capital Market or any other stock exchange, market or trading facility on which the shares are traded or in private transactions. These sales may be at fixed or negotiated prices. A Selling Stockholder may use any one or more of the following methods when selling shares:

ordinary brokerage transactions and transactions in which the broker-dealer solicits purchasers;

block trades in which the broker-dealer will attempt to sell the shares as agent but may position and resell a portion of the block as principal to facilitate the transaction;

purchases by a broker-dealer as principal and resale by the broker-dealer for its account;

an exchange distribution in accordance with the rules of the applicable exchange;

privately negotiated transactions;

Table of Contents

settlement of short sales entered into after the effective date of the registration statement of which this prospectus is a part;

in transactions through broker-dealers that agree with the Selling Stockholder to sell a specified number of such shares at a stipulated price per share;

through the writing or settlement of options or other hedging transactions, whether through an options exchange or otherwise;

a combination of any such methods of sale; or

any other method permitted pursuant to applicable law.

Broker-dealers engaged by the Selling Stockholder may arrange for other broker-dealers to participate in sales. Broker-dealers may receive commissions or discounts from the Selling Stockholder (or, if any broker-dealer acts as agent for the purchaser of shares, from the purchaser) in amounts to be negotiated, but, except as set forth in a supplement to this prospectus, in the case of an agency transaction not in excess of a customary brokerage commission in compliance with FINRA Rule 2440; and in the case of a principal transaction a markup or markdown in compliance with FINRA IM-2440.

In connection with the sale of the common stock or interests therein, the Selling Stockholder may enter into hedging transactions with broker-dealers or other financial institutions, which may in turn engage in short sales of the common stock in the course of hedging the positions they assume. The Selling Stockholder may also sell shares of the common stock short and deliver these shares to close out its short position, or loan or pledge the common stock to broker-dealers that in turn may sell these securities. The Selling Stockholder may also enter into option or other transactions with broker-dealers or other financial institutions or create one or more derivative securities which require the delivery to such broker-dealer or other financial institution of shares offered by this prospectus, which shares such broker-dealer or other financial institution may resell pursuant to this prospectus (as supplemented or amended to reflect such transaction).

The Selling Stockholder may be deemed an underwriter within the meaning of the Securities Act and any broker-dealers or agents that are involved in selling the shares may be deemed to be underwriters within the meaning of the Securities Act in connection with such sales. In such event, any commissions received by such broker-dealers or agents and any profit on the resale of the shares purchased by them may be deemed to be underwriting commissions or discounts under the Securities Act. The Selling Stockholder has informed us that it does not have any written or oral agreement or understanding, directly or indirectly, with any person to distribute the common stock. In no event shall any broker-dealer receive fees, commissions and markups which, in the aggregate, would exceed eight percent (8%).

We are required to pay certain fees and expenses incurred by us incident to the registration of the shares. We have agreed to indemnify the Selling Stockholder against certain losses, claims, damages and liabilities, including liabilities under the Securities Act.

Any persons, including the Selling Stockholder, who may be deemed an underwriter within the meaning of the Securities Act will be subject to the prospectus delivery requirements of the Securities Act including Rule 172

thereunder. In addition, any shares covered by this prospectus which qualify for sale pursuant to Rule 144 under the Securities Act may be sold under Rule 144 rather than under this prospectus. The Selling Stockholder has advised us that there is no underwriter or coordinating broker acting in connection with the proposed sale of the resale shares by the Selling Stockholder.

We agreed to keep this prospectus effective until the earlier of (i) the date on which the shares may be resold by the Selling Stockholder without registration and without regard to any volume or manner-of-sale limitations by reason of Rule 144, without the requirement for us to be in compliance with the current public information under Rule 144 under the Securities Act or any other rule of similar effect or (ii) all of the shares have been sold pursuant to this prospectus or Rule 144 under the Securities Act of any other rule of similar effect. The resale shares will be

Table of Contents

sold only through registered or licensed brokers or dealers if required under applicable state securities laws. In addition, in certain states, the resale shares may not be sold unless they have been registered or qualified for sale in the applicable state or an exemption from the registration or qualification requirement is available and is complied with.

Under applicable rules and regulations under the Exchange Act, any person engaged in the distribution of the resale shares may not simultaneously engage in market making activities with respect to the common stock for the applicable restricted period, as defined in Regulation M, prior to the commencement of the distribution. In addition, the Selling Stockholder will be subject to applicable provisions of the Exchange Act and the rules and regulations thereunder, including Regulation M, which may limit the timing of purchases and sales of shares of the common stock by the Selling Stockholder or any other person. We will make copies of this prospectus available to the Selling Stockholder and have informed the Selling Stockholder of the need to deliver a copy of this prospectus to each purchaser at or prior to the time of the sale (including by compliance with Rule 172 under the Securities Act).

## 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.

## 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-1. 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. 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 statement on Schedule 14A filed on April 25, 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 and September 4, 2014; 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.

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.

Table of Contents

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.

## WHERE YOU CAN FIND MORE INFORMATION

This prospectus is part of a registration statement on Form S-1 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.

Table of Contents

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 regarding which indemnification is sought, and we are not aware of any threatened litigation that may result in claims for indemnification.

## 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.

## DEALER PROSPECTUS DELIVERY OBLIGATION

Until the date that is 90 days from the date of this prospectus, all dealers that effect transactions in these securities, whether or not participating in this offering, may be required to deliver a prospectus. This is in addition to the dealers obligation to deliver a prospectus when acting as underwriters and with respect to their unsold allotments or subscriptions.

Table of Contents

## PART II

## INFORMATION NOT REQUIRED IN PROSPECTUS

### Item 13. Other Expenses of Issuance and Distribution.

The estimated expenses of the offering, all of which are to be borne by the Company, are as follows:

| | |
|---|---|
| SEC Registration Fee | $ 350 |
| Printing and Engraving Expenses * | 5,000 |
| Accounting Fees and Expenses * | 15,000 |
| Legal Fees and Expenses * | 15,000 |
| Transfer Agent Fees * | 5,000 |
| Miscellaneous Expenses * | 2,650 |
| Total * | $ 43,000 |

* Estimated

### Item 14. Indemnification of Directors and Officers.

Under Delaware law, a corporation may indemnify any person who was or is a party or is threatened to be made a party to an action (other than an action by or in the right of the corporation) by reason of his or her service as a director or officer of the corporation, or his or her service, at the corporation s request, as a director, officer, employee or agent of another corporation or other enterprise, against expenses (including attorneys fees) that are actually and reasonably incurred by such person ( Expenses ), and judgments, fines and amounts paid in settlement that are actually and reasonably incurred by such person, in connection with the defense or settlement of such action, provided that such person acted in good faith and in a manner he or she reasonably believed to be in or not opposed to the corporation s best interests, and, with respect to any criminal action or proceeding, had no reasonable cause to believe that his or her conduct was unlawful. Although Delaware law permits a corporation to indemnify any person referred to above against Expenses in connection with the defense or settlement of an action by or in the right of the corporation, provided that such person acted in good faith and in a manner he or she reasonably believed to be in or not opposed to the corporation s best interests, if such person has been judged liable to the corporation, indemnification is only permitted to the extent that the Court of Chancery (or the court in which the action was brought) determines that, despite the adjudication of liability, such person is entitled to indemnity for such Expenses as the court deems proper. The General Corporation Law of the State of Delaware also provides for mandatory indemnification of any director, officer, employee or agent against Expenses to the extent such person has been successful in any proceeding covered by the statute. In addition, the General Corporation Law of the State of Delaware provides the general authorization of advancement of a director s or officer s litigation expenses in lieu of requiring the authorization of such advancement by the board of directors in specific cases, and that indemnification and advancement of expenses provided by the statute shall not be deemed exclusive of any other rights to which those seeking indemnification or advancement of expenses may be entitled under any bylaw, agreement or otherwise.

The Bylaws of the Company provide for the broad indemnification by the directors and officers of the Company and for advancement of litigation expenses to the fullest extent permitted by current Delaware law. The Company also has entered into indemnification contracts with its directors and officers.

The Company maintains a policy of directors and officers liability insurance which reimburses the Company for expenses which it may incur in connection with the foregoing indemnity provisions and which may provide direct indemnification to directors and officers where the Company is unable to do so.

Insofar as indemnification for liabilities arising under the Securities Act may be permitted to directors, officers and controlling persons of the Company pursuant to the above, the Company has been advised that in the opinion of the SEC such indemnification is against public policy as expressed in the Securities Act and is, therefore, unenforceable.

Table of Contents

**Item 15. Recent Sales of Unregistered Securities.**

The Company has sold the following securities within the past three years that were not registered under the Securities Act:

On August 12, 2011, the Company issued 6,400,000 pre-split shares of the Company s common stock to TFG Radiant at a price of $1.15 per pre-split share or $7,360,000 in the aggregate. In addition, TFG Radiant received an option to acquire an additional 9,500,000 pre-split shares of the Company s common stock at an exercise price of $1.55 per pre-split share. This option expired on February 12, 2014.

In January 2013, the Company retained a consulting firm to provide certain consulting services relating to the retail distribution of the Company s consumer products. In exchange for the consulting services, the Company issued to the consulting firm 240,000 pre-split shares of the Company s common stock, of which 120,000 pre-split shares vested immediately and the remaining 120,000 pre-split shares vested in January 2014. Under the terms of the consulting agreement, the Company held the shares in escrow until January 2014.

In April 2013, the Company issued 2,500,000 pre-split shares of the Company s common stock to Foo Joo Loong in a private placement at a pre-split per share price of $0.57. The Company received proceeds of $1,425,000 from this transaction.

The Company issued to Seow Seng Wei in three tranches a total of (i) 750,000 shares of Series A Preferred Stock at a price of $8.00 per share and (ii) warrants to purchase up to 2,625,000 pre-split shares of the Company s common stock, resulting in gross proceeds of $6,000,000 to the Company. The warrants have a three year term and an exercise price of $0.90 per pre-split share of the Company s common stock. At the first closing on June 17, 2013, the Company issued 125,000 pre-split shares of Series A preferred stock and a warrant to purchase 437,500 pre-split shares of the Company s common stock in exchange for gross proceeds of $1,000,000. At the second closing on August 7, 2013, the Company issued 375,000 pre-split shares of Series A preferred stock and a warrant to purchase 1,312,500 pre-split shares of the Company s common stock in exchange for gross proceeds of $3,000,000. At the third closing on August 15, 2013, the Company issued 250,000 shares of Series A preferred stock and a warrant to purchase 875,000 pre-split shares of the Company s common stock in exchange for gross proceeds of $2,000,000.

On April 1, 2014, the Company entered into the stock purchase agreement with the Selling Stockholder to offer in two tranches up to a total of 600 shares of Series C preferred stock. In the first tranche, on April 1, 2014, the Selling Stockholder purchased 300 shares of Series C preferred stock from the Company at a price of $10,000.00 per share of Series C preferred stock, which resulted in gross proceeds to the Company of $3,000,000. In the second tranche, on May 29, 2014, the Selling Stockholder purchased 300 shares of Series C Preferred Stock from the Company at a price of $10,000.00 per share of Series C Preferred Stock, which resulted in gross proceeds to the Company of $3,000,000. On May 1, 2014, the Company issued an additional 30 shares of Series C preferred stock to the Selling Stockholder in accordance with the Registration Rights Agreement between the Company and the Selling Stockholder.

On July 29, 2014, the Company entered into a securities purchase agreement with SHTARD Enterprises Ltd. to offer in two tranches up to a total of 12,000,000 pre-split shares of the Company s common stock at a pre-split price of $0.33 per share, and gross proceeds of up to $4,000,000. The first tranche closed on July 29, 2014, with the Company s issuing 4,000,000 pre-split shares of the Company s common stock in exchange for gross proceeds of $1,320,000. The second tranche closed on August 11, 2014, with the Company s issuing 8,000,000 pre-split shares of the Company s common stock in exchange for gross proceeds of $2,640,000.

On August 29, 2014, the Company entered into a securities purchase agreement with Seng Wei Seow and TFG Radiant Investment Group Ltd. for a private placement of a total of 3,115,618 post-split shares of the Company s common stock which is expected to result in gross proceeds of approximately $8,000,000 to the Company. The private placement will take place in two tranches. In the first tranche, which closed on August 29, 2014, the

Table of Contents

Company issued (i) 845,309 post-split shares of Common Stock to Seow and (ii) 845,309 post-split shares of Common Stock to TFG Radiant, all at a price of $2.366 per share, resulting in gross proceeds of approximately $4,000,000 to the Company. For the second tranche, the Company plans to issue 1,425,000 post-split shares of Common Stock to TFG Radiant at a post-split price of $2.80 per share, which is expected to result in gross proceeds of approximately $4,000,000 to the Company. The closing of the second tranche is subject to the Company s obtaining stockholder approval of the issuance of the second tranche shares in accordance with the applicable listing rules of The Nasdaq Stock Market.

The securities described above were deemed exempt from registration under the Securities Act in reliance upon Section 4(a)(2) or Regulation D of the Securities Act. There were no underwriters employed in connection with any of the transactions set forth in this Item 15.

**Item 16. Exhibits and Financial Statement Schedules.**

| Exhibit Number | Description |
|---|---|
| 3.1 | Amended and Restated Certificate of Incorporation (incorporated by reference to Exhibit 3.2 to our Registration Statement on Form SB-2 filed January 23, 2006 (Reg. No. 333-131216)) |
| 3.2 | Certificate of Amendment to the Amended and Restated Certificate of Incorporation (incorporated by reference to Exhibit 3.1 to our Quarterly Report on Form 10-Q for the quarter ended September 30, 2011) |
| 3.3 | Certificate of Amendment to the Amended and Restated Certificate of Incorporation (incorporated by reference to Exhibit 3.1 to our Current Report on Form 8-K filed February 11, 2014) |
| 3.4 | Certificate of Amendment to the Amended and Restated Certificate of Incorporation (incorporated by reference to Exhibit 3.1 to our Current Report on Form 8-K filed September 2, 2014) |
| 3.5 | Second Amended and Restated Bylaws (incorporated by reference to Exhibit 3.2 to our Current Report on Form 8-K filed on February 17, 2009) |
| 3.6 | First Amendment to Second Amended and Restated Bylaws (incorporated by reference to Exhibit 3.3 to our Quarterly Report on Form 10-Q for the quarter ended September 30, 2009) |
| 3.7 | Second Amendment to Second Amended and Restated Bylaws (incorporated by reference to Exhibit 3.1 to our Current Report on Form 8-K filed January 25, 2013) |
| 4.1 | Form of Common Stock Certificate (incorporated by reference to Exhibit 4.1 to our Registration Statement on Form SB-2 filed January 23, 2006 (Reg. No. 333-131216)) |
| 4.2 | Certificate of Designations of Series A Preferred Stock (incorporated by reference to Exhibit 4.2 to our Registration Statement on Form S-3 filed July 1, 2013 (Reg. No. 333-189739)) |
| 4.3 | Form of Warrant (incorporated by reference to Exhibit 4.3 to our Registration Statement on Form S-3 filed July 1, 2013 (Reg. No. 333-189739, as amended)) |
| 4.4 | Certificate of Designations of Series B-1 and B-2 Preferred Stock (incorporated by reference to Exhibit 3.1 to our Current Report on Form 8-K filed October 30, 2013) |

| | |
|---|---|
| 4.5 | Certificate of Designations of Series C Preferred Stock (incorporated by reference to Exhibit 3.1 to our Current Report on Form 8-K filed April 2, 2014) |
| 5.1 | Opinion of Faegre Baker Daniels LLP* |
| 10.1 | Ascent Solar Technologies, Inc. Fourth Amended and Restated 2008 Restricted Stock Plan (including Form of Restricted Stock Award Agreement and Form of Restricted Stock Unit Agreement) (incorporated by reference to Annex B to our Definitive Proxy Statement filed on April 25, 2014) |
| 10.2 | Ascent Solar Technologies, Inc. Fourth Amended and Restated 2005 Stock Option Plan (incorporated by reference to Exhibit 10.1 to our Current Report on Form 8-K filed on June 17, 2010) |
| 10.3 | Securities Purchase Agreement, dated January 17, 2006, between the Company and ITN Energy Systems, Inc. (incorporated by reference to Exhibit 10.1 to our Registration Statement on Form SB-2 filed on January 23, 2006 (Reg. No. 333-131216))[CTR] |

Table of Contents

| | |
|---|---|
| 10.4 | Invention and Trade Secret Assignment Agreement, dated January 17, 2006, between the Company and ITN Energy Systems, Inc. (incorporated by reference to Exhibit 10.2 to our Registration Statement on Form SB-2 filed on January 23, 2006 (Reg. No. 333-131216))[CTR] |
| 10.5 | Patent Application Assignment Agreement, dated January 17, 2006, between the Company and ITN Energy Systems, Inc. (incorporated by reference to Exhibit 10.3 to our Registration Statement on Form SB-2 filed on January 23, 2006 (Reg. No. 333-131216)) |
| 10.6 | License Agreement, dated January 17, 2006, between the Company and ITN Energy Systems, Inc. (incorporated by reference to Exhibit 10.4 to our Registration Statement on Form SB-2 filed on January 23, 2006 (Reg. No. 333-131216))[CTR] |
| 10.7 | Service Center Agreement, dated January 17, 2006, between the Company and ITN Energy Systems, Inc., as amended (incorporated by reference to Exhibit 10.6 to our Registration Statement on Form SB-2 filed on January 23, 2006 (Reg. No. 333-131216)) |
| 10.8 | Administrative Services Agreement, dated January 17, 2006, between the Company and ITN Energy Systems, Inc., as amended (incorporated by reference to Exhibit 10.8 to our Registration Statement on Form SB-2 filed on January 23, 2006 (Reg. No. 333-131216)) |
| 10.9 | Letter Agreement, dated November 23, 2005, among the Company, ITN Energy Systems, Inc. and the University of Delaware (incorporated by reference to Exhibit 10.16 to our Registration Statement on Form SB-2/A filed on May 26, 2006 (Reg. No. 333-131216)) |
| 10.10 | License Agreement, dated November 21, 2006, between the Company and UD Technology Corporation (incorporated by reference to Exhibit 10.1 to our Current Report on Form 8-K filed on November 29, 2006)[CTR] |
| 10.11 | Novation Agreement, dated January 1, 2007, among the Company, ITN Energy Systems, Inc. and the United States Government (incorporated by reference to Exhibit 10.23 to our Annual Report on Form 10-KSB for the year ended December 31, 2006) |
| 10.12 | Construction Loan Agreement, dated February 8, 2008, between the Company and the Colorado Housing and Finance Authority (incorporated by reference to Exhibit 10.37 to our Annual Report on Form 10-K for the year ended December 31, 2007) |
| 10.13 | Promissory Note, dated February 8, 2008, issued to the Colorado Housing and Finance Authority (incorporated by reference to Exhibit 10.38 to our Annual Report on Form 10-K for the year ended December 31, 2007) |
| 10.14 | Loan Modification Agreement, dated January 29, 2009, between the Company and the Colorado Housing and Finance Authority (incorporated by reference to Exhibit 10.52 to our Annual Report on Form 10-K for the year ended December 31, 2008) |
| 10.15 | Cooperation Agreement, dated December 18, 2007, between the Company and Norsk Hydro Produksjon AS (incorporated by reference to Exhibit 10.1 to our Current Report on Form 8-K filed on December 19, 2007) |
| 10.16 | Equipment Purchase Agreement, dated January 7, 2010, between the Company and ITN Energy Systems, Inc. (incorporated by reference to Exhibit 10.46 to our Annual Report on Form 10-K for the year ended December 31, 2009) |
| 10.17 | Securities Purchase Agreement dated as of August 12, 2011 between TFG Radiant Investment Group Ltd. and the Company (incorporated by reference to Exhibit 99.1 to our Current Report on Form 8-K filed on |

August 15, 2011)

10.18 Stockholders Agreement dated as of August 12, 2011 between TFG Radiant Investment Group Ltd. and the Company (incorporated by reference to Exhibit 99.2 to our Current Report on Form 8-K filed on August 15, 2011)

10.19 Registration Rights Agreement dated as of August 12, 2011 between TFG Radiant Investment Group Ltd. and the Company (incorporated by reference to Exhibit 99.3 to our Current Report on Form 8-K filed on August 15, 2011)

10.20 Voting Agreement dated as of August 12, 2011 between TFG Radiant Investment Group Ltd. and Norsk Hydro Produksjon AS (incorporated by reference to Exhibit 99.4 to our Current Report on Form 8-K filed on August 15, 2011)

Table of Contents

| | |
|---|---|
| 10.21 | Joint Development Agreement dated as of August 12, 2011 between TFG Radiant New-Energy Group Ltd. and the Company (incorporated by reference to Exhibit 10.5 to our Quarterly Report on Form 10-Q for the quarter ended September 30, 2011)[CTR] |
| 10.22 | At the Market Offering Sales Agreement dated as of January 5, 2012 between JonesTrading Institutional Services LLC and the Company (incorporated by reference to Exhibit 99.1 to our Current Report on Form 8-K filed on January 5, 2012) |
| 10.23 | Amended and Restated Stockholders Agreement dated as of December 30, 2011 between TFG Radiant Investment Group Ltd. and the Company (incorporated by reference to Exhibit 99.2 to our Current Report on Form 8-K filed on January 5, 2012) |
| 10.24 | Amended and Restated Registration Rights Agreement dated as of December 30, 2011 between TFG Radiant Investment Group Ltd. and the Company (incorporated by reference to Exhibit 99.3 to our Current Report on Form 8-K filed on January 5, 2012) |
| 10.25 | Services Agreement dated December 10, 2012 between the Company and TFG Radiant (incorporated by reference to Exhibit 99.1 to our Current Report on Form 8-K filed December 14, 2012) |
| 10.26 | Stock Purchase Agreement, dated April 26, 2013, between the Company and Foo Joo Loong (filed as Exhibit 10.1 to our Registration Statement on Form S-3 filed July 1, 2013 (Reg. No. 333-189739)) |
| 10.27 | Securities Purchase Agreement, dated June 17, 2013, between the Company and Seng Wei Seow (filed as Exhibit 10.2 to our Registration Statement on Form S-3 filed July 1, 2013 (Reg. No. 333-189739)) |
| 10.28 | Registration Rights Agreement dated June 17, 2013 between the Company and Seng Wei Seow (filed as exhibit 10.2 to our Current Report on Form 8-K filed June 21, 2013) |
| 10.29 | First Amendment dated August 7, 2013 to Securities Purchase Agreement and Registration Rights Agreement (incorporated by reference to Exhibit 10.1 to our Current Report on Form 8-K filed on August 7, 2013) |
| 10.30 | Second Amendment dated August 13, 2013 to Securities Purchase Agreement (incorporated by reference to Exhibit 10.1 to our Current Report on Form 8-K filed on August 15, 2013) |
| 10.31 | Framework Agreement, dated July 2, 2013, between the Company and the Government of the Municipal City of Suqian in Jiangsu Province, China (incorporated by reference to Exhibit 10.5 to our Registration Statement on Form S-3 filed August 29, 2013 (Reg. No. 333-190701), as amended) |
| 10.32 | Stock Purchase Agreement, dated October 28, 2013 between the Company and Ironridge Technology Co., a division of Ironridge Global IV, Ltd. (incorporated by reference to Exhibit 10.1 to our Current Report on Form 8-K filed October 30, 2013) |
| 10.33 | Industrial Project Entry and Joint Venture Construction Contract by and between the Registrant and Suqian Economic Development Company, Ltd. dated December 28, 2013 (incorporated by reference to Exhibit 10.33 to our Annual Report on Form 10-K for the year ended December 31, 2013) |
| 10.34 | Stock Purchase Agreement, dated April 1, 2014, between the Company and Ironridge Technology Co., a division of Ironridge Global IV, Ltd. (incorporated by reference to Exhibit 10.1 to our Current Report on Form 8-K filed April 2, 2014) |
| 10.35 | Registration Rights Agreement, dated April 1, 2014, between the Company and Ironridge Technology Co., a division of Ironridge Global IV, Ltd. (incorporated by reference to Exhibit 10.2 to our Current Report on Form 8-K filed April 2, 2014) |

| | |
|---|---|
| 10.36 | Voting Agreement, dated April 1, 2014, between TFG Radiant Investment Group Ltd. and Ironridge Technology Co., a division of Ironridge Global IV, Ltd. (incorporated by reference to Exhibit 10.3 to our Current Report on Form 8-K filed April 2, 2014) |
| 10.37 | Executive Employment Agreement, dated April 4, 2014, between the Company and Kong Hian Lee (aka Victor Lee) (incorporated by reference to Exhibit 10.1 to our Current Report on Form 8-K filed April 9, 2014) |
| 10.38 | Settlement Agreement and Release, dated April 15, 2014, between Jefferies LLC (formerly known as Jefferies & Company, Inc.) and the Company (incorporated by reference to Exhibit 10.1 to our Current Report on Form 8-K filed April 22, 2014) |

Table of Contents

| | |
|---|---|
| 10.39 | Stock Purchase Agreement, dated July 29, 2014, between the Company and SHTARD Enterprise Ltd. (incorporated by reference to Exhibit 10.1 to our Current Report on Form 8-K filed July 31, 2014) |
| 10.40 | Stock Purchase Agreement, dated August 29, 2014, between the Company and Seng Wei Seow and TFG Radiant Investment Group Ltd. (incorporated by reference to Exhibit 10.1 to our Current Report on Form 8-K filed September 4, 2014) |
| 23.1 | Consent of Hein & Associates LLP* |
| 23.2 | Consent of Faegre Baker Daniels LLP (included in Exhibit 5.1)* |
| 24.1 | Power of Attorney (included on the signature pages hereof)* |

* Filed herewith.

CTR Portions of this exhibit have been omitted pursuant to a request for confidential treatment.

**Item 17. Undertakings.**

1. The undersigned registrant hereby undertakes to file, during any period in which offers or sales are being made, a post-effective amendment to this registration statement:

   (i) To include any prospectus required by Section 10(a)(3) of the Securities Act of 1933;

   (ii) To reflect in the prospectus any facts or events arising after the effective date of the registration statement (or the most recent post-effective amendment thereof) which, individually or in the aggregate, represent a fundamental change in the information set forth in the registration statement. Notwithstanding the foregoing, any increase or decrease in volume of securities offered (if the total dollar value of securities offered would not exceed that which was registered) and any deviation from the low or high end of the estimated maximum offering range may be reflected in the form of prospectus filed with the Commission pursuant to Rule 424(b) if, in the aggregate, the changes in volume and price represent no more than 20% change in the maximum aggregate offering price set forth in the Calculation of Registration Fee table in the effective registration statement;

   (iii) To include any material information with respect to the plan of distribution not previously disclosed in the registration statement or any material change to such information in the registration statement.

2. The undersigned registrant hereby undertakes that, for the purpose of determining any liability under the Securities Act of 1933, as amended, each such post-effective amendment shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.

3. The undersigned registrant hereby undertakes to remove from registration by means of a post-effective

amendment any of the securities being registered that remain unsold at the termination of the offering.

4. The undersigned registrant hereby undertakes that, for purposes of determining any liability under the Securities Act, each filing of the registrant s annual report pursuant to Section 13(a) or Section 15(d) of the Exchange Act (and, where applicable, each filing of an employee benefit plan s annual report pursuant to Section 15(d) of the Exchange Act) that is incorporated by reference in the registration statement shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.

5. The undersigned registrant hereby undertakes that, for the purposes of determining liability to any purchaser: If the registrant is subject to Rule 430C, each prospectus filed pursuant to Rule 424(b) as part of a registration statement relating to an offering, other than registration statements relying on Rule 430B or other than prospectuses filed in reliance on Rule 430A, shall be deemed to be part of and included in the registration statement as of the date it is first used after effectiveness. Provided, however, that no statement made in a

Table of Contents

registration statement or prospectus that is part of the registration statement or made in a document incorporated or deemed incorporated by reference into the registration statement or prospectus that is part of the registration statement will, as to a purchaser with a time of contract of sale prior to such first use, supersede or modify any statement that was made in the registration statement or prospectus that was part of the registration statement or made in any such document immediately prior to such date of first use.

6. Insofar as indemnification for liabilities arising under the Securities Act of 1933, as amended, may be permitted to directors, officers and controlling persons of the undersigned registrant according the foregoing provisions, or otherwise, the undersigned registrant has been advised that in the opinion of the Securities and Exchange Commission such indemnification is against public policy as expressed in the Act and is, therefore, unenforceable. In the event that a claim for indemnification against such liabilities (other than the payment by the Registrant of expenses incurred or paid by a director, officer or controlling person of the registrant in the successful defense of any action, suit or proceeding) is asserted by such director, officer or controlling person in connection with the securities being registered, the registrant will, unless in the opinion of its counsel the matter has been settled by controlling precedent, submit to a court of appropriate jurisdiction the question whether such indemnification by it is against public policy as expressed in the Securities Act of 1933, as amended, and will be governed by the final adjudication of such issue.

Table of Contents

**SIGNATURES**

Pursuant to the requirements of the Securities Act of 1933, the registrant has duly caused this registration statement to be signed on its behalf by the undersigned, thereunto duly authorized, in the City of Thornton, State of Colorado on September 5, 2014.

Ascent Solar Technologies, Inc.

By: /s/ Victor Lee
Lee Kong Hian (aka Victor Lee)

President and Chief Executive Officer

Table of Contents

**POWER OF ATTORNEY**

We, the undersigned directors and officers of Ascent Solar Technologies, Inc., do hereby constitute and appoint Victor Lee and William M. Gregorak or any of them, our true and lawful attorneys and agents, to do any and all acts and things in our name and behalf in our capacities as directors and officers and to execute any and all instruments for us and in our names in the capacities indicated below, which said attorneys and agents, or either of them, may deem necessary or advisable to enable said corporation to comply with the Securities Act of 1933, as amended, and any rules, regulations, and requirements of the Securities and Exchange Commission, in connection with this registration statement, including specifically, but without limitation, power and authority to sign for us or any of us in our names and in the capacities indicated below, any and all amendments (including post-effective amendments) to this registration statement, or any related registration statement that is to be effective upon filing pursuant to Rule 462(b) under the Securities Act of 1933, as amended; and we do hereby ratify and confirm all that the said attorneys and agents, or either of them, shall do or cause to be done by virtue hereof.

Pursuant to the requirements of the Securities Act of 1933, as amended, this registration statement has been signed below by the following persons in the capacities and on the dates indicated.

| Signature | Title | Date |
|---|---|---|
| /s/ Victor Lee | President and Chief Executive Officer and | September 5, 2014 |
| Lee Kong Hian (aka Victor Lee) | Director (Principal Executive Officer) | |
| /s/ William M. Gregorak | Vice President and Chief Financial Officer | September 5, 2014 |
| William M. Gregorak | (Principal Financial and Accounting Officer) | |
| /s/ Amit Kumar | Chairman of the Board of Directors | September 5, 2014 |
| Amit Kumar, Ph.D. | | |
| /s/ Kim J. Huntley | Director | September 5, 2014 |
| Kim J. Huntley | | |
| /s/ G. Thomas Marsh | Director | September 5, 2014 |
| G. Thomas Marsh | | |
| /s/ Xu Biao | Director | September 5, 2014 |
| Xu Biao (aka Winston Xu) | | |

Table of Contents

## EXHIBIT INDEX

| Exhibit Number | Description |
|---|---|
| 3.1 | Amended and Restated Certificate of Incorporation (incorporated by reference to Exhibit 3.2 to our Registration Statement on Form SB-2 filed January 23, 2006 (Reg. No. 333-131216)) |
| 3.2 | Certificate of Amendment to the Amended and Restated Certificate of Incorporation (incorporated by reference to Exhibit 3.1 to our Quarterly Report on Form 10-Q for the quarter ended September 30, 2011) |
| 3.3 | Certificate of Amendment to the Amended and Restated Certificate of Incorporation (incorporated by reference to Exhibit 3.1 to our Current Report on Form 8-K filed February 11, 2014) |
| 3.4 | Certificate of Amendment to the Amended and Restated Certificate of Incorporation (incorporated by reference to Exhibit 3.1 to our Current Report on Form 8-K filed September 2, 2014) |
| 3.5 | Second Amended and Restated Bylaws (incorporated by reference to Exhibit 3.2 to our Current Report on Form 8-K filed on February 17, 2009) |
| 3.6 | First Amendment to Second Amended and Restated Bylaws (incorporated by reference to Exhibit 3.3 to our Quarterly Report on Form 10-Q for the quarter ended September 30, 2009) |
| 3.7 | Second Amendment to Second Amended and Restated Bylaws (incorporated by reference to Exhibit 3.1 to our Current Report on Form 8-K filed January 25, 2013) |
| 4.1 | Form of Common Stock Certificate (incorporated by reference to Exhibit 4.1 to our Registration Statement on Form SB-2 filed January 23, 2006 (Reg. No. 333-131216)) |
| 4.2 | Certificate of Designations of Series A Preferred Stock (incorporated by reference to Exhibit 4.2 to our Registration Statement on Form S-3 filed July 1, 2013 (Reg. No. 333-189739)) |
| 4.3 | Form of Warrant (incorporated by reference to Exhibit 4.3 to our Registration Statement on Form S-3 filed July 1, 2013 (Reg. No. 333-189739, as amended)) |
| 4.4 | Certificate of Designations of Series B-1 and B-2 Preferred Stock (incorporated by reference to Exhibit 3.1 to our Current Report on Form 8-K filed October 30, 2013) |
| 4.5 | Certificate of Designations of Series C Preferred Stock (incorporated by reference to Exhibit 3.1 to our Current Report on Form 8-K filed April 2, 2014) |
| 5.1 | Opinion of Faegre Baker Daniels LLP* |
| 10.1 | Ascent Solar Technologies, Inc. Fourth Amended and Restated 2008 Restricted Stock Plan (including Form of Restricted Stock Award Agreement and Form of Restricted Stock Unit Agreement) (incorporated by reference to Annex B to our Definitive Proxy Statement filed on April 25, 2014) |
| 10.2 | Ascent Solar Technologies, Inc. Fourth Amended and Restated 2005 Stock Option Plan (incorporated by reference to Exhibit 10.1 to our Current Report on Form 8-K filed on June 17, 2010) |
| 10.3 | Securities Purchase Agreement, dated January 17, 2006, between the Company and ITN Energy Systems, Inc. (incorporated by reference to Exhibit 10.1 to our Registration Statement on Form SB-2 |

| | |
|---|---|
| | filed on January 23, 2006 (Reg. No. 333-131216))[CTR] |
| 10.4 | Invention and Trade Secret Assignment Agreement, dated January 17, 2006, between the Company and ITN Energy Systems, Inc. (incorporated by reference to Exhibit 10.2 to our Registration Statement on Form SB-2 filed on January 23, 2006 (Reg. No. 333-131216))[CTR] |
| 10.5 | Patent Application Assignment Agreement, dated January 17, 2006, between the Company and ITN Energy Systems, Inc. (incorporated by reference to Exhibit 10.3 to our Registration Statement on Form SB-2 filed on January 23, 2006 (Reg. No. 333-131216)) |
| 10.6 | License Agreement, dated January 17, 2006, between the Company and ITN Energy Systems, Inc. (incorporated by reference to Exhibit 10.4 to our Registration Statement on Form SB-2 filed on January 23, 2006 (Reg. No. 333-131216))[CTR] |
| 10.7 | Service Center Agreement, dated January 17, 2006, between the Company and ITN Energy Systems, Inc., as amended (incorporated by reference to Exhibit 10.6 to our Registration Statement on Form SB-2 filed on January 23, 2006 (Reg. No. 333-131216)) |

Table of Contents

| | |
|---|---|
| 10.8 | Administrative Services Agreement, dated January 17, 2006, between the Company and ITN Energy Systems, Inc., as amended (incorporated by reference to Exhibit 10.8 to our Registration Statement on Form SB-2 filed on January 23, 2006 (Reg. No. 333-131216)) |
| 10.9 | Letter Agreement, dated November 23, 2005, among the Company, ITN Energy Systems, Inc. and the University of Delaware (incorporated by reference to Exhibit 10.16 to our Registration Statement on Form SB-2/A filed on May 26, 2006 (Reg. No. 333-131216)) |
| 10.10 | License Agreement, dated November 21, 2006, between the Company and UD Technology Corporation (incorporated by reference to Exhibit 10.1 to our Current Report on Form 8-K filed on November 29, 2006)[CTR] |
| 10.11 | Novation Agreement, dated January 1, 2007, among the Company, ITN Energy Systems, Inc. and the United States Government (incorporated by reference to Exhibit 10.23 to our Annual Report on Form 10-KSB for the year ended December 31, 2006) |
| 10.12 | Construction Loan Agreement, dated February 8, 2008, between the Company and the Colorado Housing and Finance Authority (incorporated by reference to Exhibit 10.37 to our Annual Report on Form 10-K for the year ended December 31, 2007) |
| 10.13 | Promissory Note, dated February 8, 2008, issued to the Colorado Housing and Finance Authority (incorporated by reference to Exhibit 10.38 to our Annual Report on Form 10-K for the year ended December 31, 2007) |
| 10.14 | Loan Modification Agreement, dated January 29, 2009, between the Company and the Colorado Housing and Finance Authority (incorporated by reference to Exhibit 10.52 to our Annual Report on Form 10-K for the year ended December 31, 2008) |
| 10.15 | Cooperation Agreement, dated December 18, 2007, between the Company and Norsk Hydro Produksjon AS (incorporated by reference to Exhibit 10.1 to our Current Report on Form 8-K filed on December 19, 2007) |
| 10.16 | Equipment Purchase Agreement, dated January 7, 2010, between the Company and ITN Energy Systems, Inc. (incorporated by reference to Exhibit 10.46 to our Annual Report on Form 10-K for the year ended December 31, 2009) |
| 10.17 | Securities Purchase Agreement dated as of August 12, 2011 between TFG Radiant Investment Group Ltd. and the Company (incorporated by reference to Exhibit 99.1 to our Current Report on Form 8-K filed on August 15, 2011) |
| 10.18 | Stockholders Agreement dated as of August 12, 2011 between TFG Radiant Investment Group Ltd. and the Company (incorporated by reference to Exhibit 99.2 to our Current Report on Form 8-K filed on August 15, 2011) |
| 10.19 | Registration Rights Agreement dated as of August 12, 2011 between TFG Radiant Investment Group Ltd. and the Company (incorporated by reference to Exhibit 99.3 to our Current Report on Form 8-K filed on August 15, 2011) |
| 10.20 | Voting Agreement dated as of August 12, 2011 between TFG Radiant Investment Group Ltd. and Norsk Hydro Produksjon AS (incorporated by reference to Exhibit 99.4 to our Current Report on Form 8-K filed on August 15, 2011) |
| 10.21 | Joint Development Agreement dated as of August 12, 2011 between TFG Radiant New-Energy Group Ltd. and the Company (incorporated by reference to Exhibit 10.5 to our Quarterly Report on Form 10-Q for the |

quarter ended September 30, 2011)[CTR]

10.22 At the Market Offering Sales Agreement dated as of January 5, 2012 between JonesTrading Institutional Services LLC and the Company (incorporated by reference to Exhibit 99.1 to our Current Report on Form 8-K filed on January 5, 2012)

10.23 Amended and Restated Stockholders Agreement dated as of December 30, 2011 between TFG Radiant Investment Group Ltd. and the Company (incorporated by reference to Exhibit 99.2 to our Current Report on Form 8-K filed on January 5, 2012)

10.24 Amended and Restated Registration Rights Agreement dated as of December 30, 2011 between TFG Radiant Investment Group Ltd. and the Company (incorporated by reference to Exhibit 99.3 to our Current Report on Form 8-K filed on January 5, 2012)

Table of Contents

| | |
|---|---|
| 10.25 | Services Agreement dated December 10, 2012 between the Company and TFG Radiant (incorporated by reference to Exhibit 99.1 to our Current Report on Form 8-K filed December 14, 2012) |
| 10.26 | Stock Purchase Agreement, dated April 26, 2013, between the Company and Foo Joo Loong (filed as Exhibit 10.1 to our Registration Statement on Form S-3 filed July 1, 2013 (Reg. No. 333-189739)) |
| 10.27 | Securities Purchase Agreement, dated June 17, 2013, between the Company and Seng Wei Seow (filed as Exhibit 10.2 to our Registration Statement on Form S-3 filed July 1, 2013 (Reg. No. 333-189739)) |
| 10.28 | Registration Rights Agreement dated June 17, 2013 between the Company and Seng Wei Seow (filed as exhibit 10.2 to our Current Report on Form 8-K filed June 21, 2013) |
| 10.29 | First Amendment dated August 7, 2013 to Securities Purchase Agreement and Registration Rights Agreement (incorporated by reference to Exhibit 10.1 to our Current Report on Form 8-K filed on August 7, 2013) |
| 10.30 | Second Amendment dated August 13, 2013 to Securities Purchase Agreement (incorporated by reference to Exhibit 10.1 to our Current Report on Form 8-K filed on August 15, 2013) |
| 10.31 | Framework Agreement, dated July 2, 2013, between the Company and the Government of the Municipal City of Suqian in Jiangsu Province, China (incorporated by reference to Exhibit 10.5 to our Registration Statement on Form S-3 filed August 29, 2013 (Reg. No. 333-190701), as amended) |
| 10.32 | Stock Purchase Agreement, dated October 28, 2013 between the Company and Ironridge Technology Co., a division of Ironridge Global IV, Ltd. (incorporated by reference to Exhibit 10.1 to our Current Report on Form 8-K filed October 30, 2013) |
| 10.33 | Industrial Project Entry and Joint Venture Construction Contract by and between the Registrant and Suqian Economic Development Company, Ltd. dated December 28, 2013 (incorporated by reference to Exhibit 10.33 to our Annual Report on Form 10-K for the year ended December 31, 2013) |
| 10.34 | Stock Purchase Agreement, dated April 1, 2014, between the Company and Ironridge Technology Co., a division of Ironridge Global IV, Ltd. (incorporated by reference to Exhibit 10.1 to our Current Report on Form 8-K filed April 2, 2014) |
| 10.35 | Registration Rights Agreement, dated April 1, 2014, between the Company and Ironridge Technology Co., a division of Ironridge Global IV, Ltd. (incorporated by reference to Exhibit 10.2 to our Current Report on Form 8-K filed April 2, 2014) |
| 10.36 | Voting Agreement, dated April 1, 2014, between TFG Radiant Investment Group Ltd. and Ironridge Technology Co., a division of Ironridge Global IV, Ltd. (incorporated by reference to Exhibit 10.3 to our Current Report on Form 8-K filed April 2, 2014) |
| 10.37 | Executive Employment Agreement, dated April 4, 2014, between the Company and Kong Hian Lee (aka Victor Lee) (incorporated by reference to Exhibit 10.1 to our Current Report on Form 8-K filed April 9, 2014) |
| 10.38 | Settlement Agreement and Release, dated April 15, 2014, between Jefferies LLC (formerly known as Jefferies & Company, Inc.) and the Company (incorporated by reference to Exhibit 10.1 to our Current Report on Form 8-K filed April 22, 2014) |
| 10.39 | Stock Purchase Agreement, dated July 29, 2014, between the Company and SHTARD Enterprise Ltd. (incorporated by reference to Exhibit 10.1 to our Current Report on Form 8-K filed July 31, 2014) |
| 10.40 | |

| | |
|---|---|
| | Stock Purchase Agreement, dated August 29, 2014, between the Company and Seng Wei Seow and TFG Radiant Investment Group Ltd. (incorporated by reference to Exhibit 10.1 to our Current Report on Form 8-K filed September 4, 2014) |
| 23.1 | Consent of Hein & Associates LLP* |
| 23.2 | Consent of Faegre Baker Daniels LLP (included in Exhibit 5.1)* |
| 24.1 | Power of Attorney (included on the signature pages hereof)* |

* Filed herewith.

CTR Portions of this exhibit have been omitted pursuant to a request for confidential treatment.