

Ascent Solar Technologies, Inc.
Form DEF 14A
April 29, 2013
Table of Contents

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

SCHEDULE 14A

(RULE 14a-101)

SCHEDULE 14A INFORMATION

Proxy Statement Pursuant to Section 14(a) of the
Securities Exchange Act of 1934

(Amendment No.)

Filed by the Registrant Filed by a Party other than the Registrant

Check the appropriate box:

- Preliminary Proxy Statement
- Confidential, for Use of the Commission Only (as permitted by Rule 14a-6(e)(2))
- Definitive Proxy Statement
- Definitive Additional Materials
- Soliciting Material Pursuant to §240.14a-12

ASCENT SOLAR TECHNOLOGIES, INC.

(Name of Registrant as Specified in its Charter)

(Name of Person(s) Filing Proxy Statement, if other than the Registrant)

Payment of Filing Fee (Check the appropriate box):

- No fee required.
- Fee computed on table below per Exchange Act Rules 14a-6(i)(1) and 0-11.

(1) Title of each class of securities to which transaction applies:

(2) Aggregate number of securities to which transaction applies:

(3) Per unit price or other underlying value of transaction computed pursuant to Exchange Act Rule 0-11 (set forth the amount on which the filing fee is calculated and state how it was determined):

(4) Proposed maximum aggregate value of transaction:

(5) Total fee paid:

Fee paid previously with preliminary materials:

Check box if any part of the fee is offset as provided by Exchange Act Rule 0-11(a)(2) and identify the filing for which the offsetting fee was paid previously. Identify the previous filing by registration statement number, or the Form or Schedule and the date of its filing.

(1) Amount Previously Paid:

(2) Form, Schedule or Registration Statement No.:

(3) Filing Party:

(4) Date Filed:

Table of Contents

April 29, 2013

Dear Stockholder:

You are cordially invited to attend the 2013 Annual Meeting of Stockholders of Ascent Solar Technologies, Inc. to be held on June 18, 2013. The meeting will be held at the DoubleTree by Hilton, 83 East 120th Avenue, Thornton, Colorado 80233 beginning at 2:00 p.m. Mountain Time. At this year's Annual Meeting, our stockholders will be asked to elect two Class 2 directors, to ratify the selection of Hein & Associates LLP as our independent registered public accounting firm, to conduct an advisory vote on the compensation of our executive officers, to conduct an advisory vote on the frequency of future advisory votes on the compensation of our executive officers, and to approve an amendment to the Company's certificate of incorporation to effect a reverse stock split of the Company's issued and outstanding common stock. Additional information about the Annual Meeting is given in the attached Notice of 2013 Annual Meeting of Stockholders and Proxy Statement.

In accordance with rules adopted by the Securities and Exchange Commission, we are pleased to again furnish these proxy materials to stockholders primarily over the Internet, rather than in paper form. We believe these rules allow us to provide our stockholders with expedited and convenient access to the information they need, while helping to conserve natural resources and lower the costs of printing and delivering proxy materials.

Whether or not you plan to attend the Annual Meeting, we hope you will vote as soon as possible. Voting your proxy will ensure your representation at the Annual Meeting. If you attend the Annual Meeting in person, you may vote your shares in person even though you have previously given your proxy.

Sincerely,

Victor Lee

President and Chief Executive Officer

Table of Contents

ASCENT SOLAR TECHNOLOGIES, INC.

12300 North Grant Street

Thornton, Colorado 80241

(720) 872-5000

NOTICE OF 2013 ANNUAL MEETING OF STOCKHOLDERS

June 18, 2013

at 2:00 p.m. Mountain Time

TO OUR STOCKHOLDERS:

NOTICE IS HEREBY GIVEN that the 2013 Annual Meeting of Stockholders (the "Annual Meeting") of Ascent Solar Technologies, Inc., a Delaware corporation, will be held on June 18, 2013, at 2:00 p.m. Mountain Time at the DoubleTree by Hilton, 83 East 120th Avenue, Thornton, Colorado 80233, for the following purposes, as more fully described in the Proxy Statement accompanying this notice:

1. ELECTION OF DIRECTORS. To elect two Class 2 directors to serve until the 2016 annual meeting of stockholders and their successors have been elected and qualified;
2. RATIFICATION OF AUDITORS. To ratify the Audit Committee's appointment of Hein & Associates LLP as our independent registered public accounting firm for the year ending December 31, 2013;
3. NON-BINDING ADVISORY VOTE TO APPROVE EXECUTIVE COMPENSATION. To approve a non-binding advisory resolution on the Company's compensation of its executive officers;
4. NON-BINDING ADVISORY VOTE ON THE FREQUENCY OF ADVISORY VOTE TO APPROVE EXECUTIVE COMPENSATION. To hold a non-binding advisory vote on the frequency of future advisory votes on the Company's compensation of its executive officers;
5. AUTHORIZATION FOR REVERSE STOCK SPLIT. To approve an amendment to the Company's certificate of incorporation (the "Certificate of Incorporation") to effect a reverse stock split of the Company's issued and outstanding common stock (the "Reverse Stock Split"); and
6. ANY OTHER BUSINESS that may properly come before the Annual Meeting or any adjournments or postponements thereof.

Stockholders who owned shares of our common stock at the close of business on April 15, 2013 are entitled to receive notice of, attend and vote at the Annual Meeting and any adjournment or postponement thereof. A complete list of these stockholders will be available at our corporate offices listed above during regular business hours for the ten days prior to the Annual Meeting.

Your vote is important. Whether or not you plan to attend the Annual Meeting, please vote as soon as possible. If you received notice of how to access the proxy materials over the Internet, a proxy card was not sent to you, but you may vote by telephone or online. If you received a proxy card and other proxy materials by mail, you may vote by mailing a completed proxy card, by telephone or online. For specific voting instructions, please refer to the information provided in the following Proxy Statement, together with your proxy card or the voting instructions you receive by e-mail or that are provided via the Internet.

The Board of Directors recommends stockholders vote FOR the Class 2 director nominees, FOR annual advisory votes on executive compensation (Proposal 4), and FOR Proposals 2, 3, and 5.

By Order of the Board of Directors

Victor Lee

President and Chief Executive Officer

Thornton, Colorado

Table of Contents

April 29, 2013

Important Notice Regarding the Availability of Proxy Materials for the Annual Meeting of Stockholders to be held on June 18, 2013 — The Proxy Statement and our Annual Report on Form 10-K for the fiscal year ended December 31, 2012 are available at www.ascentsolar.com.

Table of Contents

ASCENT SOLAR TECHNOLOGIES, INC.
12300 North Grant Street
Thornton, Colorado 80241
(720) 872-5000

PROXY STATEMENT

Your proxy is being solicited by the Board of Directors (the “Board”) of Ascent Solar Technologies, Inc., a Delaware corporation, for use at the 2013 Annual Meeting of Stockholders (the “Annual Meeting”) to be held at 2:00 p.m. Mountain Time on June 18, 2013, or at any adjournment or postponement thereof, for the purposes set forth in this Proxy Statement. The Annual Meeting will be held at the DoubleTree by Hilton, 83 East 120th Avenue, Thornton, Colorado 80233.

These proxy materials are first being provided on or about April 29, 2013 to all stockholders as of the record date, April 15, 2013. Stockholders who owned our common stock at the close of business on April 15, 2013 are entitled to receive notice of, attend and vote at the Annual Meeting. On the record date, there were 51,523,758 shares of our common stock outstanding.

This Proxy Statement is being furnished to you with a copy of our Annual Report on Form 10-K for the fiscal year ended December 31, 2012 (the “Annual Report”), which was filed with the Securities and Exchange Commission (the “SEC”) on March 14, 2013. We will provide, without charge, additional copies of our Annual Report upon request. Any exhibits listed in the Annual Report also will be furnished upon request at the actual expense we incur in furnishing such exhibit to you. Any such requests should be directed to our Corporate Secretary at our executive offices set forth above.

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

Table of Contents

TABLE OF CONTENTS

<u>VOTING AND RELATED MATTERS</u>	<u>1</u>
<u>EXECUTIVE OFFICERS AND DIRECTORS</u>	<u>3</u>
<u>CORPORATE GOVERNANCE</u>	<u>5</u>
<u>EXECUTIVE COMPENSATION</u>	<u>9</u>
<u>SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT</u>	<u>10</u>
<u>RELATED PARTY TRANSACTIONS</u>	<u>11</u>
<u>SECTION 16(a) BENEFICIAL OWNERSHIP REPORTING COMPLIANCE</u>	<u>13</u>
<u>PRINCIPAL ACCOUNTANTS</u>	<u>14</u>
<u>REPORT OF THE AUDIT COMMITTEE OF THE BOARD OF DIRECTORS</u>	<u>14</u>
<u>PROPOSAL NO. 1: ELECTION OF DIRECTORS</u>	<u>15</u>
<u>PROPOSAL NO. 2: RATIFICATION OF APPOINTMENT OF HEIN & ASSOCIATES LLP</u>	<u>15</u>
<u>PROPOSAL NO. 3: NON-BINDING ADVISORY VOTE TO APPROVE EXECUTIVE</u>	<u>15</u>
<u>COMPENSATION</u>	<u>15</u>
<u>PROPOSAL NO. 4: NON-BINDING ADVISORY VOTE ON THE FREQUENCY OF ADVISORY</u>	<u>16</u>
<u>VOTE TO APPROVE EXECUTIVE COMPENSATION</u>	<u>16</u>
<u>PROPOSAL NO. 5: AUTHORIZATION FOR REVERSE STOCK SPLIT</u>	<u>17</u>
<u>ANNUAL REPORT ON FORM 10-K</u>	<u>20</u>
<u>STOCKHOLDER PROPOSALS</u>	<u>20</u>
<u>OTHER BUSINESS</u>	<u>21</u>
<u>ANNEX A: CERTIFICATE OF AMENDMENT TO AMENDED AND RESTATED</u>	<u>22</u>
<u>CERTIFICATE OF INCORPORATION</u>	<u>22</u>

Table of Contents

VOTING AND RELATED MATTERS

Voting Procedures

As a stockholder of Ascent Solar, you have a right to vote on certain business matters affecting us. The proposals that will be presented at the Annual Meeting and upon which you are being asked to vote are discussed below. Each share of our common stock you owned as of the record date entitles you to one vote on each proposal presented at the Annual Meeting.

Electronic Delivery of Proxy Materials

Under rules adopted by the SEC, we are furnishing proxy materials to our stockholders primarily via the Internet, instead of mailing printed copies of those materials to each stockholder. On or about April 29, 2013, we sent our stockholders (other than those who previously requested electronic or paper delivery) a Notice of Internet Availability containing instructions on how to access our proxy materials, including our Proxy Statement and our Annual Report, on the Internet. The Notice of Internet Availability also instructs stockholders on how they can vote over the Internet or by telephone.

If you would prefer to receive printed proxy materials, please follow the instructions included in the Notice of Internet Availability. If you have previously elected to receive our proxy materials electronically, you will continue to receive these materials via e-mail unless you elect otherwise.

Methods of Voting

You may vote over the Internet, by telephone, by mail or in person at the Annual Meeting.

Voting over the Internet. You can vote via the Internet. The website address for Internet voting and the instructions for voting are provided on your Notice or proxy card. You will need to use the control number appearing on your Notice or proxy card to vote via the Internet. If you vote via the Internet you do not need to vote by telephone or return a proxy card.

Voting by Telephone. You can vote by telephone by calling the toll-free telephone number provided on your proxy card. You will need to use the control number appearing on your Notice or proxy card to vote by telephone. If you vote by telephone you do not need to vote over the Internet or return a proxy card.

Voting by Mail. If you received a printed proxy card, you can vote by marking, dating and signing it, and returning it in the postage-paid envelope provided. You may also download the form of proxy card off the Internet and mail it to us. Please promptly mail your proxy card to ensure that it is received prior to the closing of the polls at the Annual Meeting.

Voting in Person at the Meeting. If you attend the Annual Meeting and plan to vote in person, we will provide you with a ballot at the Annual Meeting. If your shares are registered directly in your name, you are considered the stockholder of record, and you have the right to vote in person at the Annual Meeting. If your shares are held in the name of your broker or other nominee, you are considered the beneficial owner of shares held in street name. As a beneficial owner, if you wish to vote at the Annual Meeting, you will need to bring to the Annual Meeting a legal proxy from your broker or other nominee authorizing you to vote those shares.

Revoking Your Proxy

You may revoke your proxy at any time before it is voted at the Annual Meeting. To do this, you must:

- enter a new vote over the Internet or by telephone, or by signing and returning a replacement proxy card;
- provide written notice by June 18, 2013 of the revocation to our Corporate Secretary at our principal executive offices, which are located at 12300 North Grant Street, Thornton, Colorado 80241; or
- attend the Annual Meeting and vote in person.

Quorum and Voting Requirements

Stockholders of record at the close of business on April 15, 2013 are entitled to receive notice and vote at the meeting. On the record date, there were 51,523,758 issued and outstanding shares of our common stock. Each holder of our common stock voting at the meeting, either in person or by proxy, may cast one vote per share of common stock held on all matters to be voted on at the meeting.

The presence, in person or by proxy, of the holders of a majority of the outstanding shares of common stock entitled to vote constitutes a quorum for the transaction of business at the meeting. Assuming that a quorum is present:

(1)

the affirmative vote of a majority of the shares having voting power present in person or by proxy will be required to elect each director nominee;

Table of Contents

- the affirmative vote of a majority of the shares having voting power present in person or by proxy will be required
- (2) to ratify the appointment of Hein & Associates LLP as our independent registered public accounting firm for the year ending December 31, 2013;
 - (3) the affirmative vote of the holders of a majority of the outstanding shares of Common Stock will be required to approve the authorization of the Board of Directors to implement a Reverse Stock Split; and unless otherwise required by our Second Amended and Restated Bylaws (the "Bylaws") or by applicable law, the affirmative vote of a majority of the shares present having voting power in person or by proxy will be required to
 - (4) approve any other matter properly presented for a vote at the meeting; provided that if any stockholders are entitled to vote thereon as a class, such approval will require the affirmative vote of a majority of the shares entitled to vote as a class who are present in person or by proxy.

The votes on Proposal 3 and Proposal 4 are non-binding advisory votes. The Board of Directors will consider our executive officer compensation to have been approved by stockholders if Proposal 3 receives more votes "For" than "Against". The Board of Directors will consider stockholders to have selected the frequency alternative (one year, two years or three years) of Proposal 4 that receives the greatest number of votes. However, because this vote is advisory and not binding on the Company or our Board of Directors in any way, the Board of Directors may decide that it is in our and our stockholders' best interests to hold an advisory vote on executive compensation more or less frequently than the alternative approved by our stockholders.

Votes cast by proxy or in person at the meeting will be tabulated by the election inspectors appointed for the meeting. Such inspectors will also determine whether a quorum is present. The election inspectors will treat abstentions as shares that are present and entitled to vote for purposes of determining the presence of a quorum, but as unvoted for purposes of determining the approval of any matter submitted to the stockholders for a vote. If your shares are held in street name and you do not instruct your broker on how to vote your shares, your brokerage firm, in its discretion, may either leave your shares unvoted or vote your shares on routine matters. The election of directors, the advisory vote to approve executive compensation, the advisory vote on the frequency of advisory votes to approve executive compensation and the Reverse Stock Split proposal are considered non-routine matters. Consequently, without your voting instructions, your brokerage firm cannot vote your shares on these proposals. These unvoted shares, called "broker non-votes," refer to shares held by brokers who have not received voting instructions from their clients and who do not have discretionary authority to vote on non-routine matters. The proposal to ratify the appointment of Hein & Associates LLP as our independent registered public accounting firm for the current fiscal year is considered a routine matter. To the extent your brokerage firm votes your shares on your behalf on this proposal, your shares also will be counted as present for the purpose of determining a quorum. Abstentions shall have no effect on the outcome of Proposal 4; abstentions shall have the same as a vote against Proposals 1, 2, 3 and 5. Broker non-votes shall have the same effect as a vote against Proposal 5; broker non-votes shall have no effect on the outcome of Proposals 1, 2, 3 and 4.

Voting of Proxies

When a proxy is properly executed and returned, the shares it represents will be voted at the Annual Meeting as directed. If no specification is indicated, the shares will be voted:

- (1) "for" the election of the director nominees set forth in this Proxy Statement;
- (2) "for" the ratification of the appointment of Hein & Associates LLP as our independent registered public accounting firm for the year ending December 31, 2013;
- (3) "for" the approval, on an advisory basis, of the compensation of our executive officers;
- (4) "for" every "one year" as the frequency for future advisory votes on the compensation of our executive officers;
- (5) "for" the authorization of the Board of Directors to implement a Reverse Stock Split; and

(6) at the discretion of your proxies on any other matter that may be properly brought before the Annual Meeting.

If your shares are held in street name and you do not instruct your broker on how to vote your shares, your brokerage firm, in its discretion, may either leave your shares unvoted or vote your shares on routine matters, which include the ratification of our independent registered public accounting firm.

Voting Confidentiality

2

Table of Contents

Proxies, ballots and voting tabulations are handled on a confidential basis to protect your voting privacy. This information will not be disclosed, except as required by law.

Voting Results

Voting results will be announced at the Annual Meeting and published in a Form 8-K to be filed within four (4) business days after the Annual Meeting.

Householding of Proxy Materials

In a further effort to reduce printing costs and postage fees, we have adopted a practice approved by the SEC called "householding." Under this practice, stockholders who have the same address and last name and do not participate in electronic delivery of proxy materials will receive only one copy of our proxy materials, unless one or more of these stockholders notifies us that he or she wishes to continue receiving individual copies.

If: (1) you share an address with another stockholder and received only one set of proxy materials, and would like to request a separate paper copy of these materials; or (2) you share an address with another stockholder and in the future together you would like to receive only a single paper copy of these materials, please notify our Corporate Secretary by mail at 12300 North Grant Street, Thornton, Colorado 80241.

Proxy Solicitation

We will bear the cost of this solicitation. In addition, we may reimburse brokerage firms and other persons representing beneficial owners of shares for reasonable expenses incurred in forwarding solicitation materials to such beneficial owners. Proxies also may be solicited by our directors, officers or employees, personally, or by mail, facsimile, telephone, messenger or via the Internet, without additional compensation.

Driving Directions to the Annual Meeting

The DoubleTree by Hilton is approximately 29 miles from Denver International Airport. From the Airport, take Pena Boulevard to I-70 West to I-270 to North I-25 to 120th Avenue Exit 223. Merge on to 120th turn left on Grant Street, take the first left and proceed through the parking lot to the hotel.

EXECUTIVE OFFICERS AND DIRECTORS

Our executive officers, continuing directors and director nominees, their ages and positions with us as of April 15, 2013, are as follows:

Name	Age	Position
Victor Lee	45	President and Chief Executive Officer, Director
Gary Gatchell	55	Chief Financial Officer and Secretary
Amit Kumar, Ph.D.	48	Chairman of the Board, Director
Kim J. Huntley	58	Director
G. Thomas Marsh	69	Director
Xu Biao	43	Director

Victor Lee (Lee Kong Hian) has been the President and Chief Executive Officer of Ascent Solar Technologies Inc. since February 1, 2012 and as a member of our Board since November 2011. Mr. Victor Lee is the managing director of Tertius Financial Group Pte Ltd, a boutique corporate advisory and private investment firm he founded in February 2009. He brings more than 17 years of experience in corporate banking, real estate finance and investment management, and corporate advisory services at leading worldwide financial institutions. Mr. Victor Lee began his career at Citibank N.A., in 1993, handling small- and medium-sized corporate finance and progressed to a vice president position in the International Personal Banking Division. In 1999 he moved to Deutsche Bank AG as Vice President and in 2004 was promoted to managing director Singapore Market Head in the Private Wealth Management Division, where he was responsible for management of approximately \$1 Billion in assets. From 2007 until 2009, he was with Morgan Stanley Private Wealth Management, most recently as executive director and head of Singapore/Malaysia markets. Mr. Victor Lee holds a Bachelor's degree in Accounting from the University of Wisconsin and a Master's in Wealth Management from the Singapore Management University. Mr. Victor Lee is a designated board representative of TFG Radiant pursuant to the Amended and Restated Stockholders Agreement between us and TFG Radiant.

Table of Contents

Gary Gatchell has served as our Chief Financial Officer and Secretary since March 2008. Prior to joining Ascent Solar, Mr. Gatchell served as the Chief Financial Officer of Carrier Access Corporation, a telecommunications equipment provider (“Carrier Access”). Mr. Gatchell joined Carrier Access, a NASDAQ listed company, in June 2005. Prior to joining Carrier Access, from 1999 to 2004, Mr. Gatchell served as the Chief Financial Officer of Voyant Technologies, Inc., a leading provider of audio conferencing equipment that was acquired by Polycom, Inc., and as an audit manager at KPMG. Mr. Gatchell is a registered Certified Public Accountant and holds a Master's degree in Accountancy from the University of Denver. Mr. Gatchell is a member of the AICPA and CSCPA.

Amit Kumar, Ph.D. has served on our Board of Directors since June 2007 and as Chairman since January 2011. Dr. Kumar is currently President and CEO of Geo Fossil Fuels, LLC, a privately held Energy company. From September 2001 until June 30, 2010, Dr. Kumar was President and CEO of CombiMatrix Corporation (NASDAQ: CBMX). Previously, Dr. Kumar was Vice President of Life Sciences of Acacia Research Corp (NASDAQ: ACTG). From January 1999 to February 2000, Dr. Kumar was the founding President and Chief Executive Officer of Signature BioSciences, Inc., a life science company developing technology for advanced research in genomics, proteomics and drug discovery. From January 1998 to December 1999, Dr. Kumar was an Entrepreneur in Residence with Oak Investment Partners, a venture capital firm. From October 1996 to January 1998, Dr. Kumar was a Senior Manager at IDEXX Laboratories, Inc., a biotechnology company. From October 1993 to September 1996, Dr. Kumar was Head of Research & Development for Idetek Corporation, which was later acquired by IDEXX Laboratories, Inc. Dr. Kumar received his B.S. degree in chemistry from Occidental College. After joint studies at Stanford University and the California Institute of Technology, he received his Ph.D. in Chemistry from Caltech in 1991. He also completed a post-doctoral fellowship at Harvard University in 1993. Dr. Kumar has authored and co-authored over 40 peer-reviewed publications and holds a dozen patents. Dr. Kumar brings significant leadership experience as well as experience in photovoltaic research including work on energy conversion using cells made from silicon (single crystal, polycrystalline, and amorphous), gallium arsenide, indium phosphide, metal oxides and other materials. Dr. Kumar is a member of the Board of Directors of CopyTele, Inc. (OTC: COPY) and Aeolus Pharmaceuticals (OTC: AOLS).

Kim J. Huntley has served on our Board of Directors since June 2010. Mr. Huntley served in the Defense Logistics Agency (DLA) of the U.S. Department of Defense (DOD) for more than 32 years in positions of increasing responsibility. Most recently, from July 2008 until his retirement in January 2010, Mr. Huntley served as Director of the Defense Energy Support Center (DESC) in Fort Belvoir, Virginia. The DESC operates as part of the DLA and is responsible for providing energy solutions to the DOD and federal civilian agencies. As Director of the DESC, Mr. Huntley was the principal executive officer in charge of approximately 1,100 employees worldwide and over \$25 billion in annual appropriations involving energy infrastructure and products. From March 2006 and immediately prior to becoming Director of the DESC, Mr. Huntley served in leadership roles involving supply chain management, including Deputy Commander for the Defense Supply Center in Richmond, Virginia and Columbus, Ohio, and as Executive Director of Customer Support and Readiness. From December 2003 to March 2006, Mr. Huntley served as Chief of the Customer Support Office in Fort Belvoir, Virginia. Mr. Huntley chaired the Inter Agency Working Group for Alternative Fuels and Renewable Energy from January 2009 to January 2010. The Group included senior energy representatives from DOD, DOE, EPA, and other major Federal Agencies. Mr. Huntley holds a B.A. degree in Economics from Golden Gate University and attended post-graduate courses in economics at California State University, Hayward. Mr. Huntley brings extensive supply chain, budget and defense industry experience to our Board.

G. Thomas Marsh has served on our Board of Directors since June 2010. In June 2006, Mr. Marsh retired as Executive Vice President of Lockheed Martin Space Systems Company, a subsidiary of Lockheed Martin Corporation. Lockheed Martin Space Systems designs, develops, tests, manufactures and operates advanced-technology systems, including human space flight systems, satellites and instruments, space observatories and interplanetary spacecraft, laser radar, fleet ballistic missiles, and missile defense systems. From 1969 until its merger in 1995 to form Lockheed Martin Corporation, Mr. Marsh worked at Martin Marietta Corporation, most recently in the position of President, Manned Space Systems. After 1995, he held positions of increasing responsibility

within Lockheed Martin Corporation, including serving as President and General Manager of the Missiles and Space Operations business unit from 2002 until his appointment as Executive Vice President of Lockheed Martin Space Systems in 2003. Mr. Marsh was responsible for business operations and the activities of approximately 18,000 Space Systems employees. Mr. Marsh holds a B.S. degree in Electrical Engineering from the University of New Mexico, an M.B.A. from the University of Colorado, and attended the Massachusetts Institute of Technology's Sloan School of Management. Mr. Marsh brings a background in executive management and deep experience with the space and defense industries to our Board.

Xu Biao (Winston Xu) has served on our Board of Directors since April 2012. Mr. Xu currently serves as the Chairman of Radiant Group which he founded in 1997, and as the Chairman of TFG Radiant Investment Group Ltd., a joint venture between Radiant Group and Tertius Financial Group, a private investment firm based in Singapore. Mr. Xu has more than 15 years of experience with investments and operations for a broad spectrum of business start-ups, developments, turnarounds and private equity investments. As a Fellow Chartered Institute of Building ("CIOB") member, Mr. Xu is an industry expert in the areas of metallic roofing design and construction, building materials, manufacturing, and international trading. Mr. Xu is a self-made

Table of Contents

entrepreneur and has businesses footprints spanning the world. He started his career in 1995 as a project manager for Shenzhen Nanli Decorate Construction Company where he designed and developed over thirty types of profiles and systems and is the owner of such intellectual property. He is a certified engineer in Construction Management from China National Institute of Engineers. He holds a Bachelor of Science degree in Industrial Design from ZhongNan Industrial University, and a MBA from QingHua University. Mr. Xu is a designated board representative of TFG Radiant pursuant to the Amended and Restated Stockholders Agreement between us and TFG Radiant.

CORPORATE GOVERNANCE

Overview

Our Bylaws provide that the size of our Board of Directors is to be determined from time to time by resolution of the Board of Directors, but shall consist of at least two and no more than nine members. Our Board of Directors currently consists of five members. Following the annual meeting, the Board of Directors will consist of five members. The Board has determined that the following directors are “independent” as required by the listing standards of The NASDAQ Global Market and by our corporate governance guidelines: Dr. Kumar, Mr. Huntley and Mr. Marsh. Our Certificate of Incorporation provides that the Board of Directors will be divided into three classes. Our Class 1 director is Dr. Amit Kumar. Our Class 2 directors are Kim J. Huntley and G. Thomas Marsh. Our Class 3 directors are Victor Lee and Xu Biao. The terms of Messrs. Huntley and Marsh expire at the Annual Meeting. Upon the recommendation of the Nominating and Governance Committee, the Board has nominated Messrs. Huntley and Marsh as the Class 2 director nominees.

Board Leadership Structure and Role in Risk Oversight

We currently separate the roles of Chairman of the Board and Chief Executive Officer. We believe that Dr. Kumar possesses the strategic, technical and industry knowledge and expertise to serve as our Chairman. As President and Chief Executive Officer, Mr. Victor Lee is responsible for day-to-day oversight of our operations and personnel. Notwithstanding the foregoing, our Board does not have a formal policy regarding separation of the Chairman and Chief Executive Officer roles, and the Board may in the future decide to implement such a policy if it deems it in the best interests of us and our stockholders. The Board does not have a lead independent director.

Risk is inherent with every business, and how well a business manages risk can ultimately determine its success. We face a number of risks, including credit risk, interest rate risk, liquidity risk, operational risk, strategic risk and reputation risk. Management is responsible for the day-to-day management of risks we face, while the Board, as a whole and through its committees, has responsibility for the oversight of risk management. In its risk oversight role, the Board of Directors has the responsibility to satisfy itself that the risk management processes designed and implemented by management are adequate and functioning as designed. To do this, the Chairman of the Board meets regularly with management to discuss strategy and the risks we face. In addition, the Audit Committee regularly monitors our enterprise risk, including financial risks, through reports from management. Senior management attends the Board meetings and is available to address any questions or concerns raised by the Board on risk management and any other matters. The Chairman of the Board and independent members of the Board work together to provide strong, independent oversight of our management and affairs through the Board’s standing committees and, when necessary, executive sessions of the independent directors.

Committees of the Board of Directors

Our Board has three standing committees: an Audit Committee, a Compensation Committee, and a Nominating and Governance Committee. Each committee operates pursuant to a charter. The charters of the Audit Committee, the Compensation Committee, and the Nominating and Governance Committee can be found on our website www.ascentsolar.com.

Audit Committee. Our Audit Committee oversees our accounting and financial reporting processes, internal systems of accounting and financial controls, relationships with independent auditors, and audits of financial statements.

Specific responsibilities include the following:

- selecting, hiring and terminating our independent auditors;
- evaluating the qualifications, independence and performance of our independent auditors;
- approving the audit and non-audit services to be performed by our independent auditors;

• reviewing the design, implementation, adequacy and effectiveness of our internal controls and critical accounting policies;
• reviewing and monitoring the enterprise risk management process;

5

Table of Contents

overseeing and monitoring the integrity of our financial statements and our compliance with legal and regulatory requirements as they relate to financial statements or accounting matters;
reviewing, with management and our independent auditors, any earnings announcements and other public announcements regarding our results of operations; and
preparing the report that the SEC requires in our annual proxy statement.

Our Audit Committee is comprised of Mr. Huntley, Dr. Kumar and Mr. Marsh. Mr. Huntley serves as Chairman of the Audit Committee. The Board has determined that all members of the Audit Committee are independent under the rules of The NASDAQ Global Market, and that Mr. Huntley qualifies as an “audit committee financial expert,” as defined by the rules of the SEC.

Compensation Committee. Our Compensation Committee assists our Board in determining the development plans and compensation of our officers, directors and employees. Specific responsibilities include the following:

- approving the compensation and benefits of our executive officers;
- reviewing the performance objectives and actual performance of our officers; and
- administering our stock option and other equity compensation plans.

The Compensation Committee reviews all components of compensation including base salary, bonus, equity compensation, benefits and other perquisites. In addition to reviewing competitive market values, the Compensation Committee also examines the total compensation mix, pay-for-performance relationship and how all elements, in the aggregate, comprise the executives’ total compensation package. The CEO makes recommendations to the Compensation Committee from time to time regarding the appropriate mix and level of compensation for other officers. Those recommendations consider the objectives of our compensation philosophy and the range of compensation programs authorized by the Compensation Committee. The Compensation Committee may determine director compensation by reviewing peer group data. Although the Compensation Committee has the authority to retain outside third parties, it does not currently utilize any outside consultants. The Compensation Committee may delegate certain of its responsibilities, as it deems appropriate, to other committees or officers.

Our Compensation Committee is comprised of Mr. Marsh, Mr. Huntley and Dr. Kumar. Mr. Marsh serves as Chairman of the Compensation Committee. Our Board has determined that all members of the Compensation Committee are independent under the rules of The NASDAQ Global Market.

Nominating and Governance Committee. Our Nominating and Governance Committee assists our Board by identifying and recommending individuals qualified to become members of our Board, reviewing correspondence from our stockholders, and establishing, evaluating and overseeing our corporate governance guidelines. Specific responsibilities include the following:

- evaluating the composition, size and governance of our Board and its committees and making recommendations regarding future planning and the appointment of directors to our committees;
- establishing a policy for considering stockholder nominees for election to our Board; and
- evaluating and recommending candidates for election to our Board.

Our Nominating and Governance Committee is comprised of Dr. Kumar, Mr. Huntley, and Mr. Marsh. Dr. Kumar serves as Chairman of our Nominating and Governance Committee. Our Board has determined that all members of the Nominating and Governance Committee are independent under the rules of The NASDAQ Global Market.

When considering potential director candidates for nomination or election, the following characteristics are considered in accordance with our Nominating and Governance Committee Charter:

- high standard of personal and professional ethics, integrity and values;
- training, experience and ability at making and overseeing policy in business, government and/or education sectors;
- willingness and ability to keep an open mind when considering matters affecting interests of us and our constituents;
- willingness and ability to devote the time and effort required to effectively fulfill the duties and responsibilities related to the Board and its committees;
- willingness and ability to serve on the Board for multiple terms, if nominated and elected, to enable development of a deeper understanding of our business affairs;

willingness not to engage in activities or interests that may create a conflict of interest with a director's responsibilities and duties to us and our constituents; and
• willingness to act in the best interests of us and our constituents, and objectively assess Board, committee and management performances.

6

Table of Contents

In addition, in order to maintain an effective mix of skills and backgrounds among the members of our Board, the following characteristics also may be considered when filling vacancies or identifying candidates:

- independence;
- diversity (e.g., age, geography, professional, other);
- professional experience;
- industry knowledge (e.g., relevant industry or trade association participation);
- skills and expertise (e.g., accounting or financial);
- leadership qualities;
- public company board and committee experience;
- non-business-related activities and experience (e.g., academic, civic, public interest);
- continuity (including succession planning);
- size of the Board;
- number and type of committees, and committee sizes; and
- legal and other applicable requirements and recommendations, and other corporate governance-related guidance regarding Board and committee composition.

The Nominating and Governance Committee will consider candidates recommended by stockholders who follow the nomination procedures in our bylaws. The Nominating and Governance Committee does not have a formal policy with respect to diversity; however, as noted above, the Board and the Nominating and Governance Committee believe that it is essential that Board members represent diverse viewpoints.

Number of Meetings

The Board held a total of nine meetings in 2012. Our Audit Committee held nine meetings, our Compensation Committee held three meetings, and our Nominating and Governance Committee held two meetings in 2012. Except for Xu Biao, each director attended at least 75% of the aggregate of the total number of meetings of the Board and the Board committees on which he served.

Board Member Attendance at Annual Stockholder Meetings

Although we do not have a formal policy regarding director attendance at annual stockholder meetings, directors are encouraged to attend these annual meetings absent extenuating circumstances. Our 2012 annual meeting was attended by five of the six directors serving at the time.

Stockholder Nominations

In accordance with our Bylaws, a stockholder wishing to nominate a director for election at an annual or special meeting of stockholders must timely submit a written proposal of nomination to us at our executive offices. To be timely, a written proposal of nomination for an annual meeting of stockholders must be received at least 90 calendar days but no more than 120 calendar days before the first anniversary of the date on which we held our annual meeting of stockholders in the immediately preceding year; provided, however, that in the event that the date of the annual meeting is advanced or delayed more than 30 calendar days from the anniversary of the annual meeting of stockholders in the immediately preceding year, the written proposal must be received: (i) at least 90 calendar days but no more than 120 calendar days prior to the date of the annual meeting; or (ii) no more than 10 days after the date we first publicly announce the date of the annual meeting. A written proposal of nomination for a special meeting of stockholders must be received no earlier than 120 calendar days prior to the date of the special meeting nor any later than the later of: (i) 90 calendar days prior to the date of the special meeting; and (ii) 10 days after the date we first publicly announce the date of the special meeting.

Each written proposal for a nominee must contain: (i) the name, age, business address and telephone number, and residence address and telephone number of the nominee; (ii) the current principal occupation or employment of each nominee, and the principal occupation or employment of each nominee for the prior ten (10) years; (iii) a complete list of companies, whether publicly traded or privately held, on which the nominee serves (or, during any of the prior ten (10) years, has served) as a member of the board of directors; (iv) the number of shares of our common stock that are owned of record and beneficially by each nominee; (v) a statement whether the nominee, if elected, intends to tender, promptly following such person's failure to receive the required vote for election or reelection at the next meeting at

which the nominee would face election or reelection, an irrevocable resignation effective upon acceptance of such resignation by the Board; (vi) a completed and signed questionnaire, representation and agreement relating to voting agreements or commitments to which the nominee is a party; (vii) other information concerning the nominee that would be required in a proxy statement soliciting the nominee's election; and (viii) information about, and representations from, the stockholder making the nomination.

7

Table of Contents

A stockholder interested in submitting a nominee for election to the Board of Directors should refer to our Bylaws for additional requirements. Upon receipt of a written proposal of nomination meeting these requirements, the Nominating and Governance Committee of the Board will evaluate the nominee in accordance with its charter and the characteristics listed above.

Director Compensation

In 2012, our independent directors each received an annual cash retainer of \$20,000 and restricted stock units valued at \$35,000 based on the closing price of our common stock on December 30, 2011. In addition, an independent director received: (1) for serving as a Board committee member, restricted stock unit awards valued at \$10,000 based on the closing price of our common stock as of December 30, 2011; (2) for serving as a committee chairman, restricted stock unit awards valued at \$20,000 based on the closing price of our common stock on December 30, 2011; and (3) for serving as chairman of the Board, additional cash compensation of \$100,000 and restricted stock unit awards valued at \$40,000 based on the closing price of our common stock on December 30, 2011.

The following Director Compensation Table summarizes the compensation of each of our non-employee directors for services rendered to us during the year ended December 31, 2012:

2012 Director Compensation Table

Name	Fees Earned or Paid in Cash (\$)	Stock Awards (\$)(1)	All Other Comp (\$)	Total (\$)
Amit Kumar (2)	149,500	112,000	—	261,500
Kim J. Huntley	25,167	83,823	—	108,990
G. Thomas Marsh	24,371	91,476	—	115,847
Richard J. Swanson (3)	12,583	85,913	—	98,496
Victor Lee	—	—	—	—
Xu Biao (4)	—	—	—	—
Hans Olav Kvalvaag (5)	—	—	—	—

(1) Represents the aggregate grant date fair value of restricted stock unit awards computed in accordance with FASB ASC Topic 718 for awards of stock granted during the year ended December 31, 2012.

The issuance of stock awards to Dr. Kumar in 2012 was limited to 200,000 shares under our 2008 Restricted Stock (2) Plan, as amended. Dr. Kumar received cash in lieu of shares based upon the total target compensation as described above.

Mr. Swanson did not stand for re-election to the Board at the end of his term in 2012. As a result, his term ended (3) with the 2012 annual meeting and 50% of the restricted stock units he was granted on January 4, 2012 were forfeited.

(4) Xu Biao (Winston Xu) Mr. Biao joined our Board on April 16, 2012, following the TFG Radiant purchase of shares from Norsk Hydro.

(5) Following the closing of the TFG Radiant's purchase of shares from Norsk Hydro, on March 30, 2012, Hans Olav Kvalvaag, a designated representative of Norsk Hydro, resigned from our Board.

In addition to the fees listed above, we reimburse the directors for travel expenses submitted to us related to their attendance at meetings of the Board or its committees. The directors did not receive any other compensation or personal benefits.

Code of Ethics

We have adopted a code of ethics that applies to our principal executive officer, principal financial officer, principal accounting officer and other senior finance and accounting staff. The code is designed to, among other things, deter wrongdoing and to promote the honest and ethical conduct of our officers and employees. The text of our code of

ethics can be found on our Internet website at www.ascentsolar.com. If we effect an amendment to, or waiver from, a provision of our code of ethics, we intend to satisfy our disclosure requirements by posting a description of such amendment or waiver on that Internet website or via a current report on Form 8-K.

Table of Contents

Communication with the Board of Directors

Stockholders may communicate with the Board by sending correspondence to our Chairman, c/o the Corporate Secretary, at our corporate address on the cover of this Proxy Statement. It is our practice to forward all such correspondence to our Chairman, who is responsible for determining whether to relay the correspondence to the other members of the Board.

EXECUTIVE COMPENSATION

Compensation of Executive Officers in 2012

The following Summary Compensation Table sets forth certain information regarding the compensation of our principal executive officer, and the two other most highly compensated executive officers at the end of our last fiscal year for services rendered in all capacities to us during the years ended December 31, 2012 and 2011.

Summary Compensation Table

Name and Principal Position	Year	Salary (\$)	Bonus (\$)	Stock Awards \$(1)	Option Awards \$(2)	All Other Comp(\$)	Total (\$)
Victor Lee—Chief Executive Officer(3)	2012	—	—	—	—	—	—
Ron Eller—Former President and Chief Executive Officer(4)	2012	79,731	—	—	—	175,000	254,731
	2011	251,731	—	430,500	455,620	—	1,137,851
Gary Gatchell—Chief Financial Officer(5)	2012	204,231	50,000	—	—	—	254,231
	2011	199,191	50,000	70,770	147,785	—	467,746

(1) Represents the aggregate grant date fair value computed in accordance with FASB ASC Topic 718 for awards of stock awards granted during the years ended December 31, 2012 and 2011.

(2) Represents the aggregate grant date fair value computed in accordance with FASB ASC Topic 718 for options granted during the years ended December 31, 2012 and 2011.

(3) Mr. Lee became our CEO in February 2012. Mr. Lee agreed to serve as CEO without any cash compensation. Mr. Lee is reimbursed for travel expenses in accordance with the Company's expense reimbursement policies.

Ron Eller ceased to be the President, Chief Executive Officer and a director of the Company on February 1, 2012.

(4) Other compensation includes severance paid to Mr. Eller under the terms of his employment agreement. Stock awards and option Awards were granted upon appointment as President and Chief Executive Officer on March 31, 2011

The stock award for Gary Gatchell had a grant date of February 3, 2011 and was for 21,000 shares with 14,000 vesting based upon achievement of 2011 corporate performance objectives and 7,000 vesting two years from the grant date. The 14,000 shares related to 2011 performance were forfeited because the corporate performance objectives were not met. There were two option awards for Gary Gatchell in 2011. The first was for 40,000 shares at an exercise price of \$3.37 per share with 25% of shares vesting annually beginning February 3, 2012. The second was for 75,000 shares at an exercise price of \$0.68 per share with 25% of shares vesting annually beginning August 4, 2012.

Executive Employment Agreements

As of December 31, 2012, we did not have any executive employment agreements.

Separation Agreements

On February 1, 2012, Mr. Eller ceased to be the President, Chief Executive Officer and a director of the Company. As provided for in Mr. Eller's employment agreement dated March 31, 2011, Mr. Eller received his base salary for a period of seven months and an additional portion of Mr. Eller's restricted stock units and stock options were vested.

Table of Contents

The following table sets forth information concerning the outstanding equity awards granted to the named executive officers as of December 31, 2012.

Outstanding Equity Awards at Fiscal Year-End

Name	Option Awards Number of Securities Underlying Unexercised Options(#)		Option Exercise Price(\$/sh)	Option Expiration Date	Stock Awards Number of Shares or Market Value of Shares or Units of Stock That Have Not Vested	
	Exercisable	Unexercisable			Units of Stock That Have Not Vested	Units of Stock That Have Not Vested
Victor Lee	—	—			—	—
Gary Gatchell(1)	20,000	—	\$3.17	12/2/2018	7,000	—
	30,000	30,000	\$4.17	2/8/2020		
	10,000	30,000	\$3.37	2/3/2021		
	18,750	56,250	\$0.68	8/4/2021		
	78,750	116,250				
Ron Eller	50,000	—	2.87	2/1/2013	—	—

Vesting dates of securities underlying unexercised options and stock awards not yet vested as of December 31, 2011:

\$4.17 options—15,000 vest 1/01/13, 15,000 vest 1/01/14. \$3.37 options—10,000 vest 2/4/13, 10,000 vest 2/3/14 10,000 (1) vest 2/3/15. \$0.68 options—18,750 vest 8/4/13, 18,750 vest 8/4/14, 18,750 vest 8/4/15. Stock awards not yet vested—7,000 vest 1/21/13.

SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT

The following table shows information regarding the beneficial ownership of our common stock by our directors, executive officers, former executive officers and greater than 5% beneficial owners as of March 31, 2013.

Beneficial ownership is determined in accordance with the rules of the SEC and generally includes any shares over which a person exercises sole or shared voting or investment power and all shares issuable upon exercise of options or the vesting of restricted stock within 60 days of March 31, 2013. For purposes of calculating the percentage of our common stock beneficially owned, the number of shares of our common stock includes 51,523,758 shares of our common stock outstanding as of March 31, 2013.

Unless otherwise indicated, each of the stockholders listed below has sole voting and investment power with respect to the shares beneficially owned. The address for each director or named executive officer is c/o Ascent Solar Technologies, Inc., 12300 North Grant Street, Thornton, Colorado 80241.

Name of Beneficial Owner	No. of Shares Beneficially Owned	Percentage	
5% Stockholders:			
TFG Radiant Investment Group Ltd.(1)	16,032,842	31.10	%
Officers and Directors:			
Victor Lee(2)	—	—	
Gary Gatchell(3)	154,250	*	
Amit Kumar, Ph.D.(4)	316,528	*	
Kim J. Huntley(5)	199,753	*	

Edgar Filing: Ascent Solar Technologies, Inc. - Form DEF 14A

G. Thomas Marsh(6)	219,219	*	
Xu Biao(7)	—	*	
All directors and executive officers as a group (10 persons)	889,750	1.72	%

* Less than 1.0%.

10

Table of Contents

- (1) The address of TFG Radiant Investment Group Ltd. is Block B. 4th Floor, Jihong R&D Building, No.1 Binlang Road, Futian FTZ, Shenzhen, China 518038.
Does not include securities held by TFG Radiant Investment Group Ltd., our largest stockholder.
- (2) Mr. Lee is managing director of Tertius Financial Group Pte Ltd. a 50% owner of TFG Radiant Investment Group Ltd., and disclaims beneficial ownership of our securities held by TFG Radiant Investment Group Ltd.
- (3) Includes 30,000 shares of restricted stock, 20,500 shares of common stock and options to purchase, 103,750 shares of common stock that are vested within 60 days of March 31, 2013.
- (4) Includes 308,528 shares of restricted stock and vested options to purchase 8,000 shares of common stock..
- (5) Includes 198,253 shares of restricted stock and 1,500 shares of common stock.
- (6) Includes 219,219 shares of restricted stock.
Does not include securities held by TFG Radiant Investment Group Ltd., our largest stockholder.
- (7) Mr. Xu is an investor in TFG Radiant Investment Group Ltd., and disclaims beneficial ownership of our securities held by TFG Radiant Investment Group Ltd.

RELATED PARTY TRANSACTIONS

Transactions Involving TFG Radiant

On August 12, 2011, we entered into a strategic alliance with TFG Radiant and its affiliates. TFG Radiant made an initial \$7.36 million equity investment in our common stock and received an option to acquire an additional 9,500,000 shares of our common stock at an exercise price of \$1.55 per share. In connection with the transaction, we entered into a stockholders agreement with TFG Radiant (the "Prior Stockholders Agreement"), which granted TFG Radiant the right to designate a member of our Board of Directors for election so long as TFG Radiant holds at least 15% of our common stock. On November 3, 2011, we appointed Mr. Victor Lee as a member of our Board of Directors and a designated representative of TFG Radiant.

On March 30, 2012, TFG Radiant purchased all of the Ascent Solar common shares then owned by Norsk Hydro, or 8,067,390 shares, for \$4 million, or approximately \$0.50 per share. Mr. Hans Olav Kvalvaag, a designated representative of Norsk Hydro, resigned from our Board on March 30, 2012, as a result of the completion of that transaction.

Amended and Restated Stockholders Agreement

We previously entered into the Prior Stockholders Agreement in connection with TFG Radiant's prior investment in our common stock. On December 30, 2011, we entered into an Amended and Restated Stockholders Agreement with TFG Radiant (the "Amended and Restated Stockholders Agreement"). The Amended and Restated Stockholders Agreement became effective March 30, 2012 and has replaced and superseded the Prior Stockholders Agreement.

Among other things, the Amended and Restated Stockholders Agreement provides that:

- a. TFG Radiant may designate a second representative for election to our Board at any time as TFG Radiant beneficially owns 25% of our outstanding common stock;
- b. TFG Radiant may designate a third representative for election to our Board at any time as TFG Radiant beneficially owns 45% of our outstanding common stock
- c. TFG Radiant will vote its shares of our common stock for the election of all persons nominated for election to our Board if such nominees (i) have been approved by a majority of our Board and (ii) such board approval included the affirmative vote of at least one TFG Radiant representative on the Board; and
- d.

Until December 31, 2013, TFG Radiant will not, without prior approval of our Board (x) acquire more than 42% of our issued and outstanding shares of common stock prior to any exercise of the “Tranche 2” option held by TFG Radiant, or (y) 53% of the issued and outstanding shares of our common stock following any exercise of the Tranche 2 option. These restrictions will terminate in certain circumstances specified in the agreement.

Pursuant to the terms of the Amended and Restated Stockholders Agreement, TFG Radiant designated Mr. Xu Biao as its second designated representative to the Board, and on April 16, 2012, Mr. Xu Biao was appointed to our Board to fill the vacancy left by Mr. Kvalvaag's resignation.

Amended and Restated Registration Rights Agreement

Table of Contents

We previously entered into a Registration Rights Agreement (the “Prior Registration Rights Agreement”) with TFG Radiant dated August 12, 2011 in connection with TFG Radiant's prior investment in us. The registration rights granted under the Prior Registration Rights Agreement lapsed in October 2011 upon the approval by our stockholders of the Tranche 2 option granted to TFG Radiant in August 2011.

On December 30, 2011, we entered into an Amended and Restated Registration Rights Agreement with TFG Radiant (the “Amended and Restated Registration Rights Agreement”). The Amended and Restated Stockholders Agreement became effective upon the closing of the TFG Radiant Transaction, at which time it replaced and superseded the Prior Registration Rights Agreement.

Under the terms of the Amended and Restated Registration Rights Agreement, TFG Radiant now has certain demand and piggy-back registration rights with respect to shares of our common stock owned by TFG Radiant.

Joint Development Agreement

We entered into a Joint Development Agreement (the “Joint Development Agreement”) with TFG Radiant dated August 12, 2011 in connection with TFG Radiant's prior investment in us. Under the terms of the Joint Development Agreement:

The parties will collaborate in order to allow TFG Radiant to (i) develop and commercialize facilities (“Fabs”) that a. manufacture Copper Indium Gallium diSelenide (“CIGS”) thin-film photovoltaic modules (“CIGS PV”) in an agreed upon territory in East Asia, and (ii) sell CIGS PV in such territory.

b. TFG Radiant agrees to pay to us certain specified non-recurring engineering funding.

We shall have the option to require TFG Radiant to purchase CIGS PV produced by us, subject to certain minimum c. volume and price thresholds.

TFG Radiant has been granted an exclusive license to intellectual property owned by us or developed by us in d. connection with constructing Fabs and selling CIGS PVs in the territory. In order to maintain exclusivity in the territory, TFG Radiant must achieve certain specified performance metrics.

TFG Radiant will pay to us a series of milestones payments in the event TFG Radiant (i) sells and ships certain e. quantities of CIGS PV and (ii) achieves certain target costs of production.

TFG Radiant will pay to us a royalty percentage based on net sales of the CIGS PV, a portion of which can be f. converted into an ownership interest in the Fab responsible for such production.

g. TFG Radiant will pay to us a license fee at the time of commissioning for each TFG Radiant Fab.

During 2012 we did not receive any funds pursuant to the Joint Development Agreement from TFG Radiant.

The Joint Development Agreement was filed as an exhibit to our Quarterly Report on Form 10-Q filed on November 10, 2011 and is subject to a confidential treatment order of the SEC through December 31, 2020.

Supply Agreement

In June 2012, we entered into a supply agreement with TFG Radiant. Under the supply agreement TFG Radiant is a distributor of our consumer products in Asia. During the year ended December 31, 2012, we recognized revenue in the amount of \$405,000 for products sold to TFG Radiant under the supply agreement. As of December 31, 2012, we had \$596,000 in receivables and deposits with TFG Radiant. Accounts receivable from TFG Radiant were collected in January 2012.

Contract Manufacturing Agreement

In June 2012, we entered into a contract manufacturing agreement with TFG Radiant. Under the terms of the contract manufacturing agreement TFG Radiant oversees certain aspects of the contract manufacturing process related to our EnerPlex™ line of consumer products. We compensate TFG Radiant for acting as general contractor in the contract manufacturing process. During the year ended December 31, 2012 we made disbursements to TFG Radiant in the amount of \$858,000 for finished goods received and deposits for work-in-process.

Table of Contents

Consulting Agreement

In December 2012, we entered into a services agreement with TGF Radiant for product design, product development and manufacturing coordination activities provided by TFG Radiant to us in connection with our new line of consumer electronics products. The services agreement has a one year term initially, and the services agreement may be terminated by either party upon 10 days prior written notice. During the year ended December 31, 2012, we made disbursements to TFG Radiant in the amount of \$600,000 for consulting fees.

Policies and Procedures with Respect to Transactions with Related Persons

The Board recognizes that related person transactions can present a heightened risk of potential or actual conflicts of interest. Accordingly, our Audit Committee charter requires that all such transactions will be reviewed and subject to approval by members of our Audit Committee, which will have access, at our expense, to our or independent legal counsel. Future transactions with our officers, directors or greater than five percent stockholders will be on terms no less favorable to us than could be obtained from independent third parties.

SECTION 16(a) BENEFICIAL OWNERSHIP REPORTING COMPLIANCE

Section 16(a) of the Exchange Act requires our directors, officers, and persons that own more than 10 percent of a registered class of our equity securities to file reports of ownership and changes in ownership with the SEC. Officers, directors, and greater than 10 percent stockholders are required by SEC regulations to furnish us with copies of all Section 16(a) forms they file.

Based solely upon our review of the copies of such forms received by us during the fiscal year ended December 31, 2012, we believe that each person who, at any time during such fiscal year, was a director, officer, or beneficial owner of more than 10 percent of our common stock complied with all Section 16(a) filing requirements in a timely manner during such fiscal year.

Table of Contents

PRINCIPAL ACCOUNTANTS

Principal Accounting Fees and Services

Fees for audit and related services by our accounting firm, Hein & Associates LLP, for the years ended December 31, 2012 and 2011 were as follows:

	2,012	2,011
Audit fees	\$ 147,000	\$ 172,000
Audit related fees	16,000	16,000
Total audit and audit related fees	\$ 163,000	\$ 188,000
Tax fees	—	—
All other fees	—	—
Total Fees	\$ 163,000	\$ 188,000

Audit fees for Hein & Associates LLP for fiscal 2012 and 2011 represent aggregate fees during the audit of the financial statements, interim reviews of the quarterly financial statements and consents and comfort letters.

Audit Committee Pre-Approval Policies and Procedures

The Audit Committee charter provides that the Audit Committee will pre-approve all audit services and non-audit services to be provided by our independent auditors before the accountant is engaged to render these services. The Audit Committee may consult with management in the decision making process, but may not delegate this authority to management. The Audit Committee may delegate its authority to pre-approve services to one or more committee members, provided that the designees present the pre-approvals to the full committee at the next committee meeting. All audit and non-audit services performed by our independent accountants have been pre-approved by our Audit Committee to assure that such services do not impair the auditors' independence from us.

Attendance at Annual Meeting

Representatives of Hein & Associates LLP are expected to be present at the annual meeting, will have the opportunity to make a statement if they desire to do so, and are expected to be available to respond to appropriate questions.

REPORT OF THE AUDIT COMMITTEE OF THE BOARD OF DIRECTORS

The Audit Committee has reviewed and discussed the audited financial statements with management. The Audit Committee has discussed with the independent accountants the matters required to be discussed by Statement on Accounting Standards No. 61, as amended (AICPA, Professional Standards, Vol. 1. AU Section 380), as adopted by the Public Company Accounting Oversight Board in Rule 3200T (as superseded by Statement on Auditing Standards No. 114). The Audit Committee also has received the written disclosures and the letter from the independent accountants required by applicable requirements of the Public Company Accounting Oversight Board regarding the independent accountant's communications with the Audit Committee concerning independence, and has discussed with the independent accountants the accountants' independence. Based on the reviews and discussions referred to above, the Audit Committee recommended to the Board of Directors that the audited financial statements be included in our Annual Report on Form 10-K for the year ended December 31, 2012.

Respectfully submitted,

AUDIT COMMITTEE

Kim J. Huntley, Chairman

Amit Kumar

G. Thomas Marsh

PROPOSAL NO. 1 – ELECTION OF DIRECTORS

Overview

There are currently five members of our Board. Our Class 1 director is Dr. Amit Kumar. Our Class 2 directors are Kim J. Huntley and G. Thomas Marsh. Our Class 3 directors are Victor Lee and Xu Biao.

The terms of Messrs. Huntley and Marsh are scheduled to expire at this Annual Meeting. Our Board has nominated Messrs. Huntley and Marsh to serve as our Class 2 directors until the 2016 annual meeting; each until their successors are duly elected and qualified.

Nominees

Upon the recommendation of our Nominating and Governance Committee, the Board has nominated Mr. Kim J. Huntley and Mr. G. Thomas Marsh to serve as our Class 2 directors until the 2016 annual meeting and until their successors are duly elected and qualified.

Vote Required

The affirmative vote of a majority of shares with voting power present in person or by proxy will be required to elect the director nominee.

Recommendation

The Board recommends that stockholders vote FOR the election of Mr. Huntley and Mr. Marsh.

Unless marked otherwise, proxies received will be voted FOR the election of the director nominee.

PROPOSAL NO. 2 – RATIFICATION OF APPOINTMENT OF HEIN & ASSOCIATES LLP

Overview

The Audit Committee has engaged the registered public accounting firm of Hein & Associates LLP as our independent registered public accounting firm to audit our financial statements for the year ending December 31, 2013. Hein & Associates LLP audited our financial statements for the years ended December 31, 2012 and 2011. Please refer to “Principal Accountants” above for information about fees and services paid to Hein & Associates LLP in 2012 and 2011, and our Audit Committee’s pre-approval policies.

Representatives of Hein & Associates LLP are expected to be present at the Annual Meeting, will have the opportunity to make a statement if they desire to do so and are expected to be available to respond to appropriate questions.

Vote Required

The affirmative vote of a majority of the shares with voting power present in person or by proxy will be required to ratify the appointment of Hein & Associates LLP as our independent registered public accounting firm to audit our financial statements for the year ending December 31, 2013.

Recommendation

The Board recommends that stockholders vote “FOR” the proposal to ratify the appointment of Hein & Associates LLP as our independent registered public accounting firm to audit our financial statements for the year ending December 31, 2013.

Unless marked otherwise, proxies received will be voted FOR ratification of Hein & Associates LLP as our independent registered public accounting firm to audit our financial statements for the year ending December 31, 2013.

PROPOSAL 3 – NON-BINDING ADVISORY VOTE ON EXECUTIVE COMPENSATION

Overview

Section 14A of the Securities Exchange Act requires public companies to conduct a separate stockholder advisory vote on executive compensation as disclosed in the Executive Compensation section of the annual proxy statement. While this advisory

vote, commonly referred to as a “say-on-pay” vote, is non-binding, the Board of Directors and the Compensation Committee will review and consider the voting results when making future decisions regarding our executive compensation programs.

We urge stockholders to carefully read the Executive Compensation section of this proxy statement, which describes the executive compensation paid to our executive officers. Our Board of Directors and our Compensation Committee believe that the compensation paid to our executive officers is effective in achieving our compensation objectives.

In accordance with Section 14A of the Securities Exchange Act, we are asking stockholders to approve the following advisory resolution at the 2013 Annual Meeting:

RESOLVED, that the stockholders of Ascent Solar Technologies, Inc. approve, on an advisory basis, the compensation of the Company's executive officers as disclosed in the Executive Compensation section of the proxy statement for the Company's 2013 Annual Meeting.

Vote Required

The affirmative vote of a majority of shares with voting power present in person or by proxy will be required to approve the resolution.

Recommendation

The Board recommends that stockholders vote FOR the resolution.

Unless marked otherwise, proxies received will be voted FOR the resolution.

PROPOSAL 4 – NON-BINDING ADVISORY VOTE ON THE FREQUENCY OF FUTURE ADVISORY VOTES ON EXECUTIVE COMPENSATION

Overview

In addition to the advisory vote on executive compensation discussed in Proposal 3, Section 14A of the Securities Exchange Act requires that, at least once every six years, we present our stockholders the opportunity to vote, on an advisory basis, on the frequency with which we should conduct future advisory votes on executive compensation. By voting on this proposal, you have an opportunity to vote on whether you would prefer that we conduct future advisory votes on executive compensation once every year, once every two years or once every three years. Stockholders may, if they wish, abstain from casting a vote on this proposal.

The Board of Directors has determined that an annual advisory vote on executive compensation will allow our stockholders to provide timely and direct input on our executive compensation philosophy, policies and practices as disclosed in the proxy statement each year. The Board of Directors believes that an annual vote is therefore consistent with the Company's efforts to engage in an ongoing dialogue with our stockholders on executive compensation and corporate governance matters. The Company recognizes that the stockholders may have different views on this issue, and therefore we look forward to hearing from our stockholders as to their preferences on the frequency of an advisory vote on executive compensation.

You may cast a vote on your preferred voting frequency by selecting the option of one year, two years or three years (or abstaining) when voting in response to the resolution set forth below.

RESOLVED, that the stockholders determine, on an advisory basis, whether the preferred frequency of an advisory vote on the executive compensation of the Company's executive officers as set forth in the proxy statement should be every year, every two years or every three years; with such frequency that receives the highest number of votes cast being the preferred advisory vote of stockholders.

This vote is advisory and not binding on us or the Board of Directors in any way. However, the Board of Directors and the Compensation Committee will take into account the outcome of the vote when considering the frequency of future advisory votes on executive compensation. The Board of Directors may decide that it is in the best interests of our stockholders and the Company to hold an advisory vote on executive compensation more or less frequently than the frequency receiving the most votes cast by our stockholders.

Vote Required

The affirmative vote of a majority of shares with voting power present in person or by proxy will be required to approve the resolution.

Recommendation

The Board recommends that stockholders vote FOR every "one year" as the frequency for future advisory votes on the compensation of our executive officers.

Unless marked otherwise, proxies received will be voted FOR the "one year" frequency option.

PROPOSAL 5 – AMENDMENT TO THE CERTIFICATE OF INCORPORATION TO EFFECT A REVERSE STOCK SPLIT

General

Our Board of Directors has unanimously adopted a resolution approving, declaring advisable and recommending to the stockholders for their approval of a proposal to amend the Certificate of Incorporation to effect a Reverse Stock Split at any whole number ratio between, and inclusive of, one for five (every 5 shares would be combined into one) and one for ten (every 10 shares would be combined into one). Approval of this Proposal will grant the Board of Directors the authority, without further action by the stockholders, to carry out the amendment to the Certificate of Incorporation at any time within one year after the date stockholder approval for the amendment is obtained, with the exact exchange ratio and timing of the Reverse Stock Split to be determined at the discretion of the Board of Directors. The decision whether and when to effect the Reverse Stock Split, and at what whole number ratio to effect the Reverse Stock Split, will be based on a number of factors, including market conditions, existing and anticipated trading prices for our common stock and the continued listing requirements of the NASDAQ Global Market.

We may not be required to effect a stock split, if before June 3, 2013, our stock has achieved a bid price of at least \$1.00 for a minimum of 10 and a maximum of 20 consecutive days. The Board of Directors reserves the right to abandon the Reverse Stock Split without further action by our stockholders at any time before the effectiveness of the amendment to the Certificate of Incorporation, even if the Reverse Stock Split has been authorized by our stockholders at the Annual Meeting. By voting in favor of the Reverse Stock Split, you are expressly also authorizing our Board of Directors to determine not to proceed with, and abandon, the Reverse Stock Split if it should so decide.

A sample form of the certificate of amendment relating to this Proposal, which we would file with the Secretary of State of the State of Delaware to effect the Reverse Stock Split, is attached to this Proxy Statement as Annex A.

Rationale for the Reverse Stock Split

Our common stock trades on the NASDAQ Global Market, which we believe helps support and maintain stock liquidity and company recognition for our stockholders. Companies listed on the NASDAQ Global Market, however, are subject to various continued listing standards imposed by the NASDAQ Stock Market. One of these standards is the "minimum bid price" requirement, which requires that the bid price of the common stock of listed companies be at least \$1.00 per share. A listed company risks being delisted and removed from the NASDAQ Global Market if the closing bid price of its stock remains below \$1.00 per share for an extended period of time.

In October 2011, we received notice from Nasdaq stating that we were not in compliance with the \$1.00 minimum bid price requirement for continued listing. We subsequently requested a hearing before a Nasdaq listing panel, and the de-listing proceedings were stayed during the pendency of the hearing process. On August 17, 2012, we received notification from The Nasdaq Listing Qualifications department that we had regained compliance with the minimum bid price requirement, and that our noncompliance had been rectified. On December 5, 2012, we received notice from Nasdaq stating that we had again fallen out of compliance with the \$1.00 minimum bid price requirement for continued listing. This notice had no immediate effect on the listing of our common stock on the Nasdaq Global Market. We were provided an initial compliance period of 180 calendar days, or until June 3, 2013, for our closing bid price to meet or exceed \$1.00 per share for a minimum of 10 consecutive business days. If this initial compliance period were to expire, we could request a hearing which would stay any delisting action in connection with the notice and allow the continued listing of our common stock until the panel renders a decision subsequent to the hearing. The implementation of a reverse stock split would likely increase the price of our stock such that we would be able to meet the \$1.00 minimum bid requirement and thereby maintain our compliance with the Nasdaq Listing Qualifications.

Effecting the Reverse Stock Split would reduce our total shares of common stock outstanding, which we believe will increase the price per share of our common stock. For example, a hypothetical company with a market value of \$50 million and 100 million shares outstanding would have a trading price of \$0.50 per share, while a company with the same market value and only 25 million shares outstanding would have a trading price of \$2.00 per share.

We are asking stockholders to approve this Proposal because we believe the Reverse Stock Split will result in a higher price per share for outstanding shares of our common stock. This, we believe, could provide a number of potential advantages. We describe each of these below.

Potential Advantages of the Reverse Stock Split

Maintain NASDAQ Global Market Listing. We believe that having our common stock delisted from the NASDAQ Global Market would be undesirable for our stockholders and potentially detrimental to our business. Among other things, being delisted could reduce the liquidity of our common stock. We also deem valuable our ticker symbol, which is easily recognized as “ASTI” and which we could lose if we were delisted by the NASDAQ Global Market. Moreover, being listed on the NASDAQ Global Market carries with it certain prestige and we believe it improves the recognition of our company.

Our Board of Directors believes that a Reverse Stock Split, at a whole number exchange ratio ranging from one for five to one for ten, would result in an increase in the price per share, and thereby help us meet the \$1.00 per share minimum bid price requirement. While our stock price has traded above \$1.00 on its own accord over the last year, our Board believes that it is in our best interests and in the interests of our stockholders to seek approval of the proposed amendment to our Certificate of Incorporation to effect the Reverse Stock Split in order to increase the likelihood that we will be able to regain compliance with the Nasdaq listing requirements. Even if our common stock’s closing bid price were to satisfy the minimum closing bid price requirements prior to approval of this Proposal, we may still effect the Reverse Stock Split if our stockholders approve this Proposal and our Board of Directors determine that effecting the Reverse Stock Split would be in the best interests of the company and its stockholders.

Facilitate Potential Future Financings. By preserving our NASDAQ Global Market listing, we can continue to consider and pursue a wide range of future financing options to support our business. We believe being listed on a national securities exchange, such as the NASDAQ Global Market, is valued highly by many long-term investors. A listing on a national securities exchange also has the potential to create better liquidity and reduce volatility for buying and selling shares of our stock, which benefits our current and future stockholders.

Increase Our Common Stock Price to a Level More Appealing for Investors. We believe that the Reverse Stock Split could enhance the appeal of our common stock to the financial community, including institutional investors, and the general investing public. We believe that a number of institutional investors and investment funds are reluctant to invest in lower-priced securities and that brokerage firms may be reluctant to recommend lower-priced stock to their clients, which may be due in part to a perception that lower-priced securities are less promising as investments, are less liquid, or are less likely to be followed by institutional securities research firms. We believe that the reduction in the number of issued and outstanding shares of our common stock caused by the Reverse Stock Split, together with the anticipated increased stock price immediately following and resulting from the Reverse Stock Split, may encourage further interest in our common stock.

Certain Risks Associated with the Reverse Stock Split

The proposed Reverse Stock Split carries with it several significant risks.

We cannot assure you, for example, that the market price per share of our common stock after the Reverse Stock Split will rise or remain constant in proportion to the reduction in the number of shares of common stock outstanding before the Reverse Stock Split. For instance, using the closing price of our common stock on April 25, 2013 of \$0.67 per share as an example, if our Board of Directors were to implement the Reverse Stock Split at a one for five ratio, we cannot assure you that the post-split market price of our common stock would be or would remain at a price of five times greater than \$0.67, or \$3.35. In many cases, the market price of a company’s shares declines after a reverse stock split. Thus, while our stock price might meet the continued listing requirements for the NASDAQ Global Market initially, we cannot assure you that it would continue to do so.

The market price of our common stock will also be affected by our performance and other factors, some of which are unrelated to the number of shares outstanding. If the Reverse Stock Split is effected and the market price of our common stock declines, the decline as a percentage of our overall market capitalization may be greater than would occur in the absence of a Reverse Stock Split. Furthermore, the liquidity of our common stock could be adversely affected by the reduced number of shares that would be outstanding after the Reverse Stock Split.

Principal Effects of the Reverse Stock Split

Reduction of Shares Held by Our Stockholders. After the effective date of the Reverse Stock Split, each stockholder will own fewer shares of our common stock. However, the Reverse Stock Split will affect all of our stockholders uniformly and will not affect any stockholder's percentage ownership interest in the Company. For example, a holder of two percent of the voting power of the outstanding shares of common stock immediately prior to the Reverse Stock Split would continue to hold two percent of the voting power of the outstanding shares of common stock immediately after the Reverse Stock Split.

The number of stockholders of record will not be affected by the Reverse Stock Split. In addition, because the number of shares of authorized common stock will not be affected, the Reverse Stock Split will result in an increase in the authorized, but unissued, shares of common stock as a percentage of total authorized shares.

Change in Number and Exercise Price of Outstanding Options and RSUs. Under the terms of our 2005 Stock Option Plan, as amended, and our 2008 Restricted Stock Plan, as amended, the administrator will make appropriate adjustments to the maximum number of shares that may be issued under the plans, the number of shares subject to outstanding awards and the exercise prices relating to awards.

Reduction in Number of Outstanding Shares; Increase in Number of Unreserved Shares. The Reverse Stock Split will reduce the total number of outstanding shares of common stock by the exchange ratio determined by the Board in its discretion and it will apply automatically to all shares of our common stock, including shares issuable upon the exercise of outstanding stock options and RSUs. The following table contains approximate information relating to our common stock under certain of the possible exchange ratios, based on share information as market close on April 25, 2013:

	Current	1-For-5 Split	1-For-10 Split
Authorized common stock	125,000,000	125,000,000	125,000,000
Common stock outstanding	51,176,906	10,235,381	5,117,691
Common stock issuable upon exercise of outstanding options	1,200,000	240,000	120,000
Common stock issuable upon vesting of restricted stock grants	300,000	60,000	30,000
Common stock reserved for issuance upon exercise of options available for future grant	1,800,000	360,000	180,000
Common stock reserved for issuance upon exercise of restricted stock available for future grant	1,200,000	240,000	120,000
Common stock authorized but unissued and unreserved	69,323,094	113,864,618.8	119,432,309.4

As reflected in the table above, the number of authorized shares of our common stock will not be reduced by the Reverse Stock Split. Accordingly, the Reverse Stock Split will have the effect of increasing the authorized, but unissued, shares of our common stock as a percentage of total authorized shares. These shares may be used by us for various purposes in the future without further stockholder approval (subject to applicable NASDAQ rules), including, among other things, financings, strategic partnering arrangements, equity incentive plans, acquisitions of assets or businesses, stock splits or stock dividends.

Procedure for Effecting Reverse Stock Split and Exchange of Stock Certificates

If this Proposal is approved by our stockholders and if our Board of Directors concludes that the Reverse Stock Split is in the best interests of the Company and its stockholders on a date within one year after stockholder approval is obtained, our Board of Directors will cause the Reverse Stock Split to be implemented at the whole number ratio between one for five and one for ten as selected by our Board of Directors in its sole discretion. We will file an amendment to our Certificate of Incorporation with the Delaware Secretary of State at such time as our Board of Directors deems appropriate. The amendment will become effective on the date that it is filed (the "Effective Date"). As soon as practicable after the Effective Date, stockholders will be notified that the Reverse Stock Split has been effected. We will retain an exchange agent (the "Exchange Agent") for purposes of implementing the exchange of stock certificates. Holders of pre-reverse split shares will be asked to surrender to the Exchange Agent certificates representing pre-reverse split shares in exchange for certificates representing post-reverse split shares in accordance with the procedures to be set forth in a letter of transmittal that will be delivered to the Company's stockholders. No new certificates will be issued to a stockholder until the stockholder has surrendered to the Exchange Agent his, her or its outstanding certificate(s) together with the properly completed and executed letter of transmittal.

STOCKHOLDERS SHOULD NOT DESTROY ANY STOCK CERTIFICATES AND SHOULD NOT SUBMIT ANY CERTIFICATES UNTIL REQUESTED TO DO SO. Stockholders whose shares are held in book-entry form do not need to submit old share certificates for exchange. These shares will automatically reflect the new quantity of shares based on the Reverse Stock Split. Beginning on the Effective Date, each certificate representing pre-reverse split shares will be deemed for all corporate purposes to evidence ownership of post-reverse split shares.

Fractional Shares

No fractional shares will be issued in connection with the Reverse Stock Split. Stockholders of record who otherwise would be entitled to receive fractional shares will be entitled to rounding up of their fractional share to the nearest whole share.

Accounting Matters

The Reverse Stock Split will not affect the common stock capital account on our balance sheet. As of the Effective Date, the stated capital on our balance sheet attributable to our common stock will be reduced proportionately based on the selected exchange ratio, and the additional paid-in capital account will be credited with the amount by which the stated capital is

19

reduced. In future financial statements, we will restate net income or loss per share and other per share amounts for periods ending before the Reverse Stock Split to give retroactive effect to the Reverse Stock Split. The per share net income or loss and net book value of our common stock will be increased because there will be fewer shares of our common stock outstanding.

Discretionary Authority of the Board of Directors to Abandon Reverse Stock Split

The Board of Directors reserves the right to abandon the Reverse Stock Split without further action by our stockholders at any time before the effectiveness of the amendment to the Certificate of Incorporation, even if the Reverse Stock Split has been authorized by our stockholders at the Annual Meeting. By voting in favor of the Reverse Stock Split, you are expressly also authorizing our Board of Directors to determine not to proceed with, and abandon, the Reverse Stock Split if it should so decide.

No Dissenter's Rights

Under applicable Delaware law, our stockholders are not entitled to dissenter's rights with respect to the Reverse Stock Split, and we will not independently provide stockholders with any such right.

Vote Required

The affirmative vote of a majority of shares with voting power present in person or by proxy will be required to approve the Reverse Stock Split authorization at the Annual Meeting. If you abstain from voting on this proposal to approve the Reverse Stock Split, it will have the same effect as a vote "AGAINST" the proposal. Your vote is therefore extremely important.

Recommendation

The Board recommends that stockholders vote FOR the Reverse Stock Split Authorization.

Unless marked otherwise, proxies received will be voted FOR the Reverse Stock Split Authorization.

Please Note: This Proxy Statement contains forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended, and is subject to the safe harbor created by that section. Such statements include, but are not limited to, all statements as to expectation or belief and statements as to the future trading price and liquidity of our common stock, whether traded on the NASDAQ Global Market or otherwise; our future results of operations; our ability to satisfy the listing requirements of NASDAQ; the prospect for analyst coverage; and financing needs, as well as assumptions relating to the foregoing. The words "anticipate," "believe," "expect," "may," "plan," "will," and similar expressions identify forward-looking statements, which speak only as of the date the statement was made.

These forward-looking statements are not guarantees of future performance. All forward-looking statements attributable to us or to persons acting on our behalf are expressly qualified in their entirety by the cautionary statements and risk factors identified from time to time in our SEC reports, including our Annual Report on Form 10-K and Quarterly Report on Form 10-Q filed with the SEC. Except as expressly required by federal securities laws, we undertake no obligation to publicly update or revise any forward-looking statements, whether as a result of new information, future events, changes in circumstances or any other reason.

ANNUAL REPORT ON FORM 10-K

On March 14, 2013, we filed our Annual Report on Form 10-K for the fiscal year ended December 31, 2012 with the SEC. A copy of the Annual Report has been sent or made available concurrently with this Proxy Statement to all stockholders entitled to notice of and to vote at the Annual Meeting. Our financial statements and management's discussion and analysis of financial condition and results of operations are incorporated by reference to our Annual Report.

STOCKHOLDER PROPOSALS

Stockholders may present proposals for action at a future meeting if they comply with SEC rules, state law and our Bylaws.

Stockholder Proposals to be Included in the Proxy Statement

To be considered for inclusion in our proxy materials for the 2014 Annual Meeting of Stockholders, a stockholder proposal must be received in writing at our offices, 12300 North Grant Street, Thornton, Colorado 80241, no later

than December 19, 2013.

20

Table of Contents

Stockholder Proposals Not to be Included in the Proxy Statement

If you wish to make a stockholder proposal at the 2014 Annual Meeting of Stockholders that is not intended to be included in our proxy materials for that meeting, you generally must provide appropriate notice to us in the manner specified in our Bylaws between February 6, 2014 and March 10, 2014. Furthermore, a proxy for our 2014 Annual Meeting of Stockholders may confer discretionary authority to vote on any matter not submitted to us by March 4, 2014.

OTHER BUSINESS

We know of no other matters to be submitted to the stockholders at the Annual Meeting. If any other matters properly come before the stockholders at the Annual Meeting, the persons named as proxies intend to vote the shares they represent as the Board may recommend.

BY ORDER OF THE BOARD OF DIRECTORS

Victor Lee

President and Chief Executive Officer

April 29, 2013

Thornton, Colorado

Annex A

CERTIFICATE OF AMENDMENT
TO THE
AMENDED AND RESTATED CERTIFICATE OF INCORPORATION
OF
ASCENT SOLAR TECHNOLOGIES, INC.

Ascent Solar Technologies, Inc., a corporation duly organized and existing under the General Corporation Law of the State of Delaware (the "Corporation"), hereby certifies as follows:

FIRST: That the Board of Directors of the Corporation has duly adopted resolutions (i) authorizing the Corporation to execute and file with the Secretary of State of the State of Delaware this Certificate of Amendment to the Amended and Restated Certificate of Incorporation (this "Amendment") to combine each [] outstanding shares of the Corporation's Common Stock, par value \$.0001 per share (the "Common Stock"), into one (1) validly issued, fully paid and non-assessable share of Common Stock; and (ii) declaring this Amendment to be advisable, submitted to and considered by the stockholders of the Corporation entitled to vote thereon for approval by the affirmative vote of such stockholders in accordance with the terms of the Company's Amended and Restated Certificate of Incorporation (the "Certificate of Incorporation") and Section 242 of the General Corporation Law of the State of Delaware (the "DGCL") and recommended for approval by the stockholders of the Corporation.

SECOND: That this Amendment was duly adopted in accordance with the terms of the Certificate of Incorporation and the provisions of Section 242 of the DGCL by the Board of Directors and stockholders of the Corporation.

THIRD: That the capital of the Corporation shall not be reduced under or by reason of this Amendment.

FOURTH: That upon the effectiveness of this Amendment, the Certificate of Incorporation is hereby amended such that the following paragraph shall be added after the first paragraph of ARTICLE 4 of the Certificate of Incorporation:

As of 5:00 p.m. (eastern time) on [,] (the "Effective Time"), each [] shares of Common Stock issued and outstanding at such time shall be combined into one (1) share of Common Stock (the "Reverse Stock Split"). The par value of the Common Stock following the Reverse Stock Split shall remain \$.0001 per share. No fractional shares will be issued in connection with the Reverse Stock Split. Stockholders of record who otherwise would be entitled to receive fractional shares, will be entitled to rounding up of their fractional share to the nearest whole share. Each certificate that immediately prior to the Effective Time represented shares of Common Stock (an "Old Certificate") shall thereafter represent that number of shares of Common Stock into which the shares of Common Stock represented by the Old Certificate shall have been combined, subject to the elimination of fractional share interests as described above.

IN WITNESS WHEREOF, the Corporation has caused this Certificate of Amendment to the Amended and Restated Certificate of Incorporation to be executed by Gary Gatchell, its Secretary, this [] day of [], 201_.

ASCENT SOLAR TECHNOLOGIES, INC.

By: /s/ Gary Gatchell
Name: Gary Gatchell
Title: Secretary

Table of Contents

Electronic Voting Instructions

You can vote by Internet or telephone!
Available 24 hours a day, 7 days a week!

Instead of mailing your proxy, you may choose one of the two voting methods outlined below to vote your proxy.

VALIDATION DETAILS ARE LOCATED BELOW IN THE TITLE BAR.

Proxies submitted by the Internet or telephone must be received by 1:00 a.m., Central Time, on June 18, 2013.

Vote by Internet

- Log on to the Internet and go to
- www.investorvote.com/ASTI
- Follow the steps outlined on the secured website.

Vote by telephone

- Call toll free 1-800-652-VOTE (8683) within the USA, US territories & Canada any time on a touch tone telephone. There is NO CHARGE to you for the call.
- Follow the instructions provided by the recorded message.

Using a black ink pen, mark your votes with an X as shown in this example. Please do not write outside the designated areas.

q PLEASE FOLD ALONG THE PERFORATION, DETACH AND RETURN THE BOTTOM PORTION IN THE ENCLOSED ENVELOPE. q

Table of Contents

A Proposals — Board of Directors recommends a vote FOR the following nominees in Proposal 1 and FOR Proposals 2, 3, and 5, and for the "one year" frequency option in Proposal 4.

1 To elect two Class 2 directors to serve until the 2016 annual meeting of stockholders; each until his successors have been elected and qualified.

01- Mr. Kim J. Huntley 02 - G. Thomas Marsh

o For ALL o Withhold ALL o Withhold Authority to vote for any individual nominee. Write number(s) of nominee(s) below. Use number only.

2 To ratify the Audit Committee's appointment of Hein & Associates LLP as our independent registered public accounting firm for the year ending December 31, 2013.

For Against Abstain

o o o

3 Non-binding advisory approval of the compensation of our executive officers.

For Against Abstain

o o o

4 Non-binding advisory vote on the frequency of advisory votes on the compensation of our executive officers.

One Year Two Years Three Years Abstain

o o o o

5 To approve an amendment to the Company's certificate of incorporation (the "Certificate of Incorporation") to effect a reverse stock split of the Company's issued and outstanding common stock (the "Reverse Stock Split").

For Against Abstain

o o o

B Non-Voting Items
Change of Address — Please print new address below.

C Authorized Signatures — This section must be completed for your vote to be counted. — Date and Sign Below
Please sign exactly as name(s) appears hereon. Joint owners should each sign. When signing as attorney, executor, administrator, corporate officer, trustee, guardian, or custodian, please give full title.

Date (mm/dd/yyyy) — Please print date below. Signature 1 — Please keep signature within the box. Signature 2 — Please keep signature within the box.

/ /

01BVLB

q PLEASE FOLD ALONG THE PERFORATION, DETACH AND RETURN THE BOTTOM PORTION IN THE ENCLOSED ENVELOPE. q

Table of Contents

Proxy — ASCENT SOLAR TECHNOLOGIES, INC.

12300 North Grant Street

Thornton, CO 80241

ANNUAL MEETING OF STOCKHOLDERS TO BE HELD ON JUNE 18, 2013

THIS PROXY IS SOLICITED ON BEHALF OF THE BOARD OF DIRECTORS

The undersigned hereby appoints Victor Lee and Gary Gatchell, and each of them individually, the proxies of the undersigned, with power of substitution to each of them, to vote all shares of Ascent Solar Technologies, Inc., a Delaware corporation, which the undersigned is entitled to vote at the Annual Meeting of Stockholders of Ascent to be held on Wednesday, June 18, 2013, at 2:00 p.m., Mountain time, at the DoubleTree by Hilton, 83 East 120th Avenue, Thornton, Colorado 80233, and at any adjournment thereof (the "Annual Meeting"), upon matters properly coming before the meeting.

In their discretion, the proxies are authorized to vote upon such other business as may properly come before the annual meeting or any adjournments or postponements thereof.

UNLESS OTHERWISE DIRECTED, THIS PROXY WILL BE VOTED "FOR" THE ELECTION OF EACH OF THE DIRECTOR NOMINEES IN PROPOSAL 1 AND "FOR" PROPOSALS 2, 3, AND 5, AND FOR THE "ONE YEAR" FREQUENCY OPTION IN PROPOSAL 4 AND AT THE DISCRETION OF YOUR PROXY ON ANY OTHER MATTER THAT MAY BE PROPERLY BROUGHT BEFORE THE ANNUAL MEETING.

Please date, sign and mail your proxy card in the envelope provided as soon as possible.

Continued and to be dated and signed on reverse side.