

Ascent Solar Technologies, Inc.
Form PRE 14A
September 13, 2011
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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):

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(3) Filing Party:

(4) Date Filed:

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ASCENT SOLAR TECHNOLOGIES, INC.

12300 Grant Street

Thornton, Colorado 80241

(720) 872-5000

NOTICE OF SPECIAL MEETING OF STOCKHOLDERS

[], 2011

[], 2011

TO OUR STOCKHOLDERS:

NOTICE IS HEREBY GIVEN that a Special Meeting of Stockholders of Ascent Solar Technologies, Inc., a Delaware corporation, will be held on [], 2011, at 2:00 p.m. Mountain Time at the Company's offices, 12300 Grant Street, Thornton, Colorado 80241, for the following purposes, as more fully described in the Proxy Statement accompanying this notice:

1. To consider and approve the issuance of 9,500,000 shares of common stock upon exercise of the option granted to TFG Radiant Investment Group Ltd. in connection with the strategic alliance described in the accompanying proxy statement.
2. To consider and approve a certificate of amendment to our Amended and Restated Certificate of Incorporation to increase the number of authorized shares of the Company's common stock from 75,000,000 to 125,000,000.
3. To transact such other business as may properly come before the special meeting or any adjournment thereof.

Stockholders who owned shares of our common stock at the close of business on [], 2011 are entitled to receive notice of, attend and vote at the Special 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 Special Meeting.

Your vote is important. Whether or not you plan to attend the Special 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 over the Internet. 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.

By Order of the Board of Directors

Ron Eller
President and Chief Executive Officer
Thornton, Colorado

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VOTING AND RELATED MATTERS

Voting Procedures

As a stockholder of Ascent, you have a right to vote on certain business matters affecting us. The proposals that will be presented at the Special 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 Special 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 [], 2011, 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 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 Special 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 Special Meeting.

Voting in Person at the Meeting. If you attend the Special Meeting and plan to vote in person, we will provide you with a ballot at the Special 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 Special 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 Special Meeting, you will need to bring to the Special 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 Special 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 of the revocation to our Corporate Secretary at our principal executive offices, which are located at 12300 Grant Street, Thornton, Colorado 80241; or

attend the Special Meeting and vote in person.

Table of Contents**Quorum and Voting Requirements To Approve Each Proposal.**

Stockholders of record at the close of business on [], 2011 are entitled to receive notice and vote at the meeting. On the record date, there were [] 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, the following table summarizes the voting requirements to approve each proposal:

Proposal	Vote Required	Broker Discretionary Voting Allowed
Proposal 1 Approval of the issuance of 9,500,000 shares of Company common stock upon the exercise of the option granted to TFG Radiant Investment Group Ltd.	Majority of the votes cast at the Special Meeting. The Tranche 1 shares acquired by TFG Radiant on August 12, 2011 will not be entitled to vote on this proposal.	No
Proposal 2 Approval of the amendment to the Company s certificate of incorporation to increase the number of authorized common shares	Majority of the outstanding shares of common stock.	No

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. Accordingly, abstentions (i) will have no affect on whether Proposal 1 is approved at the Special Meeting, and (ii) will have the same affect as a NO vote on whether Proposal 2 is approved at the Special 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, is permitted to either leave your shares unvoted or vote your shares on matters that are considered routine. Proposal 1 and Proposal 2 are both considered non-routine matters. Consequently, without your voting instructions, your brokerage firm will not be able to vote your shares on either Proposal 1 or Proposal 2. 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. Broker non-votes (i) will have no affect on whether Proposal 1 is approved at the Special Meeting, and (ii) will have the same affect as a NO vote on whether Proposal 2 is approved at the Special Meeting.

Voting of Proxies

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

- (1) FOR Proposal 1: the issuance of 9,500,000 shares of common stock upon exercise of the option granted to TFG Radiant Investment Group Ltd. in connection with the strategic alliance described in the accompanying proxy statement;
- (2) FOR Proposal 2: the amendment to the Company s Amended and Restated Certificate of Incorporation to increase the number of authorized shares of common stock from 75,000,000 to 125,000,000; and
- (3) at the discretion of your proxies on any other matter that may be properly brought before the Special Meeting.

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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 matters which are considered routine. Proposal 1 and Proposal 2 are not routine matters. Consequently, without your voting instructions, your brokerage firm will not be able to vote your shares at the Special Meeting.

Voting Confidentiality

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 Special Meeting and published in a Form 8-K to be filed within four (4) business days after the Special 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.

We will promptly deliver a separate copy of these proxy materials to any stockholder upon written oral request to our Corporate Secretary by mail at 12300 Grant Street, Thornton, Colorado 80241 or by phone at (720) 872-5000.

Any stockholder who wants to receive separate copies of proxy materials in the future, or any stockholder who is receiving multiple copies and would like to receive only one copy per household, should contact that stockholder's bank, broker, or other nominee record holder, or that stockholder may contact us at the above address and phone number.

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 Special Meeting

The Company's main office is approximately 29 miles from Denver International Airport. From the Airport, take Pena Boulevard to I-70 West to I-270 West to I-25 North. Exit 120th Avenue. Turn right onto 120th Avenue, then turn left onto Grant Street. The Company's offices are on the right.

Table of Contents**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 and greater than 5% beneficial owners as of September 6, 2011.

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. For purposes of calculating the percentage of our common stock beneficially owned, the number of shares of our common stock includes 38,910,306 shares of our common stock outstanding as of September 6, 2011.

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 Grant Street, Thornton, Colorado 80241.

Name of Beneficial Owner	No. of Shares Beneficially Owned	Percentage
<i>5% Stockholders:</i>		
Norsk Hydro Produksjon AS(1)	8,067,390	20.73%
TFG Radiant Investment Group Ltd.(2)	7,965,452	20.47%
<i>Officers and Directors:</i>		
Gary Gatchell(3)	73,500	*
Amit Kumar, Ph.D(4)	61,019	*
Hans Olav Kvalvaag(5)		
Richard J. Swanson(6)	40,592	*
Ron Eller(7)	12,430	*
Kim J. Huntley(8)	21,520	*
G. Thomas Marsh(9)	22,958	*
<i>All directors and executive officers as a group (7 persons)</i>	232,019	*

* Less than 1.0%.

- (1) The address of Norsk Hydro Produksjon AS is Drammensveien 264, N-0240, Oslo, Norway.
- (2) The address of TFG Radiant Investment Group Ltd. is Block B, Fourth Floor, Building B ,No. 1 Binlang Road, Fuitan FTZ ,Shenzhen, China 518038. Based solely on information included in a Schedule 13D filed with the SEC on August 22, 2011.
- (3) Includes 30,000 shares of restricted stock, 13,500 shares of common stock and options to purchase, 30,000 shares of common stock that are vested within 60 days of September 6, 2011.
- (4) Includes 45,207 shares of common stock, options to purchase 8,000 shares of common stock and 7,812 shares of restricted stock that are vested within 60 days of September 6, 2011.
- (5) Does not include securities held by Norsk Hydro Produksjon AS, our largest stockholder. Mr. Kvalvaag is the head of Hydro Solar, an affiliate of Norsk Hydro Produksjon AS, and disclaims beneficial ownership of our securities held by Norsk Hydro Produksjon AS.
- (6) Includes 19,756 shares of common stock, options to purchase 16,000 shares of common stock and 4,836 shares of restricted stock that are vested within 60 days of September 6, 2011.
- (7) Includes 12,430 shares of common stock.
- (8) Includes 17,428 shares of common stock and 4,092 shares of restricted stock that are vested within 60 days of September 6, 2011.
- (9) Includes 17,397 shares of common stock and 5,561 shares of restricted stock that are vested within 60 days of September 6, 2011.

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PROPOSAL NO. 1:

TO APPROVE THE ISSUANCE OF 9,500,000 SHARES OF COMMON STOCK UPON EXERCISE OF THE OPTION GRANTED TO TFG RADIANT INVESTMENT GROUP LTD. IN CONNECTION WITH THE STRATEGIC ALLIANCE DESCRIBED IN THIS PROXY STATEMENT.

Overview

On August 12, 2011, the Company entered into a strategic alliance (the Alliance) with TFG Radiant Investment Group Ltd. and its affiliates (TFG Radiant). Our stockholders are being asked to approve certain aspects of the Alliance. The Alliance includes the following financing transactions involving the Company's shares:

The sale and issuance of 6,400,000 shares of our common stock (the Tranche 1 Shares) (representing, upon completion, approximately 16.4% of our issued and outstanding common stock) to TFG Radiant. The Tranche 1 Shares represented approximately 19.7% of our issued and outstanding common stock prior to giving effect to the Alliance. The Tranche 1 Shares were sold to TFG Radiant at a price of \$1.15 per share (which was a premium of \$0.42 to the closing price of \$0.73 on Nasdaq on August 12, 2011).

The issuance to TFG Radiant of an option (the Tranche 2 Option) to purchase an additional 9,500,000 shares of common stock (the Tranche 2 Shares), subject to certain terms and conditions. If the Tranche 2 Option becomes exercisable, the shares would be sold to TFG Radiant at a price of \$1.55 per share (which is a premium of \$0.82 to the closing price of \$0.73 on Nasdaq on August 12, 2011). The sale and issuance of the Tranche 1 Shares closed on August 12, 2011. Our stockholders are being asked to approve, as required by the Marketplace Rules of the Nasdaq Stock Market, the issuance of the Tranche 2 Shares issuable upon exercise of the Tranche 2 Option.

Prior to the Alliance, the Company and an affiliate of TFG Radiant were parties to a distribution agreement for the sale of the Company's products for building integrated, automotive and portable power solutions in China. In addition, prior to the Alliance affiliates of TFG Radiant held 1,565,452 shares of the Company's common stock, which represented approximately 4.8% of the Company's outstanding common stock immediately prior to the issuance of the Tranche 1 Shares on August 12, 2011.

TFG Radiant is a joint venture of the Radiant Group, a Chinese conglomerate engaged in construction and real estate, and Tertius Financial Group, a private investment firm based in Singapore. TFG Radiant has more than 3,000 personnel and operates various businesses across China, Indonesia, Singapore and Malaysia, including in metal roofing and facades, import/export trading, real estate investment, project management and consultation, new-energy development, manufacturing and distribution and gold mining.

Summary of the Alliance

On August 12, 2011, Ascent entered into a Securities Purchase Agreement with TFG Radiant. The transactions contemplated by the Securities Purchase Agreement and the related agreements create a defined path for TFG Radiant to become a significant strategic business partner and a significant stockholder, of Ascent.

Pursuant to the Securities Purchase Agreement, on August 12, 2011, the Company sold, and TFG Radiant purchased, 6,400,000 shares of the Company's common stock in a private placement exempt from registration under the Securities Act. The Tranche 1 Shares were sold to TFG Radiant at a per share price of \$1.15 per share (which was a premium of \$0.42 to the closing price of \$0.73 on Nasdaq on August 12, 2011). The Tranche 1 Shares represented approximately 19.7% of the Company's outstanding common stock on a pre-sale basis and approximately 16.4% on a post-sale basis, in each case as of August 12, 2011. The sale of the Tranche 1 Shares resulted in proceeds to the Company of \$7,360,000.

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In addition, pursuant to the Securities Purchase Agreement, the Company has granted TFG Radiant an option to purchase 9,500,000 shares of the Company's common stock. The Tranche 2 Option will only become exercisable under certain terms and conditions, including, among other things, (i) stockholder approval for the issuance of the Tranche 2 Shares and (ii) TFG Radiant achieving certain performance milestones related to the construction of an initial photovoltaic (PV) module manufacturing facility located in Asia.

The Tranche 2 Option will terminate if it becomes exercisable and then it is not exercised on or before February 12, 2014. If a change of control transaction occurs after stockholder approval of the Tranche 2 Option but prior to such expiration date, the Tranche 2 Option will become immediately exercisable and will terminate unless exercised in connection with such change of control transaction. If the Tranche 2 Option becomes exercisable, the shares would be sold to TFG Radiant at a per share price equal to \$1.55 per share (which is a premium of \$0.82 to the closing price of \$0.73 on Nasdaq on August 12, 2011), or an aggregate of \$14,725,000.

The Tranche 2 Shares currently represent approximately 24.4% of the Company's outstanding common stock on a pre-sale basis and approximately 19.7% on a post-sale basis, in each case as of August 12, 2011.

Concurrently with the execution of the Securities Purchase Agreement, the Company and TFG Radiant (and its affiliates) also entered into a Stockholders Agreement, a Registration Rights Agreement, and a Joint Development Agreement. On the same date, TFG Radiant also entered into a Voting Agreement with Norsk Hydro Produksjon AS (Norsk Hydro).

Reasons for the Alliance

Our unique technology enables the manufacture of differentiated copper-indium-gallium-selenide (CIGS) based PV products with high power density which are light weight and flexible. We believe markets of substantial size will exist long term, requiring significant additional production capacity. We also believe that over time significant production volumes will be required to achieve appropriate product costs.

The manufacture of PV modules is a capital-intensive business. Accordingly, we have announced that we intend to augment our own manufacturing, product development and distribution capabilities by licensing our proprietary technology and manufacturing processes to others. We intend to continue manufacturing at our current facilities; however, our plans are to have significant future production capacity enabled through partnerships, joint ventures or other commercial or licensing arrangements. We expect such arrangements would transform our business model to one that is focused on development of technologies. We plan to enable partners to commercialize such technologies in exchange for license fees, consulting revenues, non-recurring engineering fees, royalties, milestone payments, and other similar arrangements. We plan to select our partners based on their capabilities in volume manufacturing, application development, marketing, distribution, sales and service for the relevant technologies and markets.

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

Consistent with the Company's strategy, we entered into the Alliance with TFG Radiant. The sale of the Tranche 1 Shares has provided us \$7.4 million of capital which will support and expand our continuing operations, including the development of our next generation PV production line. We would receive \$14.7 million of additional capital if the Tranche 2 Option is exercised in the future by TFG Radiant. As of June 30, 2011, we had approximately \$24.9 million in cash and investments. During the quarter ended June 30, 2011, we used approximately \$5.1 million in cash for operations.

The alliance includes the grant by the Company of exclusive rights to manufacture and sell solar devices based on the Company's proprietary CIGS PV technology in East Asia (China, Taiwan, Hong Kong, Thailand, Malaysia, Indonesia, Korea and Singapore). TFG Radiant has committed to invest \$165 million to build an initial PV manufacturing facility (or fab) in East Asia using the Company's proprietary processes for manufacturing

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flexible CIGS PV modules. TFG Radiant also has rights to construct additional fabs in East Asia. The Company will receive consulting fees in connection with installation and commissioning of any fabs in East Asia, license fees, royalty payments, an ownership interest in all East Asia fabs, and subject to the East Asia fabs meeting certain production and cost levels, incentive milestone payments of up to \$250 million.

We believe that TFG Radiant is a committed long-term investor who will also be an important business partner to Ascent. We believe that this alliance with TFG Radiant presents us with a compelling manner by which our PV products are manufactured and sold throughout East Asia. TFG Radiant has valuable expertise in innovative roof design and materials and in volume manufacturing. In addition, in East Asia TFG Radiant has distribution channels, installation capability and infrastructure, and an established customer base for roof-top and other products based on Ascent's flexible CIGS PV technology. Also, we believe that having a representative from TFG Radiant will add valuable expertise to our Board of Directors.

Necessity for Stockholder Approval

Our common stock is listed on the Nasdaq Global Market and, as such, we are subject to the Nasdaq Marketplace Rules. Nasdaq Marketplace Rule 5635(d) is referred to as the Nasdaq 20% Rule. The Nasdaq 20% Rule requires that an issuer obtain stockholder approval prior to certain issuances of common stock or securities convertible into or exchangeable for common stock at a price less than the greater of market price or book value of such securities (on an as exercised basis) if such issuance equals 20% or more of the common stock or voting power of the issuer outstanding before the transaction. Shares of our common stock issuable upon the exercise of the Tranche 2 Option are considered common stock issued for the purposes of determining whether the 20% limit has been reached. The ultimate number of shares of our common stock issuable upon the exercise or conversion of securities sold in the Alliance, including the Tranche 2 Shares, would result in the issuance of more than 20% of our outstanding common stock as of August 12, 2011 (the date of the Securities Purchase Agreement) at a price less than the greater of the book value or market value of the shares. Accordingly, stockholder approval of the issuance of the Tranche 2 Shares is necessary to comply with the Nasdaq 20% Rule.

Nasdaq Marketplace Rule 5635(b) requires us to obtain stockholder approval prior to certain issuances with respect to common stock or securities convertible into common stock which could result in a change of control of the issuer. This rule is referred to as the Nasdaq Change of Control Rule. Generally, Nasdaq interpretations provide that the acquisition of 20% of the shares of an issuer by one person or group of affiliated persons may be considered a change of control of such issuer. If stockholder approval is obtained, the issuance of the Tranche 1 Shares plus the Tranche 2 Shares (upon exercise of the Tranche 2 Option) would result in TFG Radiant acquiring more than 20% of our shares of common stock.

In order to permit the exercise of the Tranche 2 Option, and to comply with the Nasdaq 20% Rule and the Nasdaq Change of Control Rule, we are seeking stockholder approval for the potential issuance of securities in excess of the Nasdaq limitations upon exercise of the Tranche 2 Option issued in the Alliance.

We did not seek advance stockholder approval of the issuance of the Tranche 1 Shares and the grant of the Tranche 2 Option for the following reasons:

We sold the Tranche 1 Shares at a price less than the book value, but in excess of the market price of such securities. The total number of Tranche 1 Shares issued represented less than 20% of our outstanding stock, as calculated on a pre-transaction basis. Therefore, stockholder approval was not required by the Nasdaq Marketplace Rules.

Although we granted the Tranche 2 Option in the Alliance, the exercise of the Tranche 2 Option and issuance of the Tranche 2 Shares is expressly conditioned upon Ascent first obtaining stockholder approval of the issuance of the Tranche 2 Shares. Therefore, stockholder approval was not required by the Nasdaq Marketplace Rules.

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Interest of Certain Persons in the Alliance

Prior to the Alliance, TFG Radiant owned 1,565,452 shares of common stock, or approximately 4.8% of our outstanding common stock. In addition, an affiliate of TFG Radiant and the Company were parties to a distribution agreement for the sale of the Company's products for building integrated, automotive and portable power solutions in China.

Following the issuance of the Tranche 1 Shares, TFG Radiant owned approximately 20.5% of our common stock on a post-issuance basis. After closing on the purchase and sale of the Tranche 1 Shares, and, so long as TFG Radiant continues to hold at least fifteen percent (15%) of Company's outstanding common stock, TFG Radiant has the right to designate one individual to be appointed to our Board. A designee of TFG Radiant has not yet been added to our Board, but we expect that such a designee will be added shortly.

If the stockholders approve the issuance of the Tranche 2 Shares in connection with the exercise of the Tranche 2 Option, TFG Radiant will have the ability to become the beneficial owner of approximately 36.2% of our outstanding common stock. As soon as practicable after the purchase and sale of the Tranche 2 Shares, if any, or at such other time as the Investor beneficially owns twenty-five percent (25%) of Company's outstanding common stock, the Company has agreed to use its reasonable efforts to elect a second designated representative of TFG Radiant to the Board.

Except as noted above, to the best of our knowledge, none of our other directors or officers has a substantial interest, direct or indirect, by security holdings or otherwise, in the Alliance. Other than as set forth above and as described elsewhere in this proxy statement, we are not aware of any relationships between TFG Radiant, on the one hand, and us, or any of our directors or officers.

Terms of the Alliance

The following summary is intended to provide you with certain information concerning the Alliance; however, it is not a substitute for the Securities Purchase Agreement, the Stockholders' Agreement, the Registration Rights Agreement, the Joint Development Agreement or the Voting Agreement. A copy of the Securities Purchase Agreement, the Stockholders' Agreement, the Registration Rights Agreement, and the Voting Agreement have been attached as exhibits to a Form 8-K current report filed by us on August 15, 2011. For additional information about the Alliance, you may retrieve copies of such financing documents from the SEC's EDGAR database at www.sec.gov. The Company intends to submit a confidential treatment request to the SEC relating to the Joint Development Agreement and then file a redacted copy of the Joint Development Agreement as an exhibit to the Company's Form 10-Q quarterly report for the quarter ending September 30, 2011.

Securities Purchase Agreement

Under the terms of the Securities Purchase Agreement:

(a) TFG Radiant acquired 6,400,000 Tranche 1 Shares at a price of \$1.15 per share (which was a premium of \$0.42 to the closing price of \$0.73 on Nasdaq on August 12, 2011) or \$7,360,000 in the aggregate at a closing that occurred on August 12, 2011. The Tranche 1 Shares represent approximately 19.7% of the Company's outstanding common stock on a pre-sale basis and 16.4% on a post-sale basis. Following the closing on the Tranche 1 Shares, TFG Radiant owned an aggregate of 20.5% of the Company's outstanding common stock.

(b) The Company granted to TFG Radiant the Tranche 2 Option to purchase 9,500,000 Tranche 2 Shares. TFG Radiant may not exercise the Tranche 2 Option unless and until (1) the Company's stockholders approve the issuance of the Tranche 2 Shares, and (2) TFG Radiant meets a specified milestone in the construction of the first East Asia fab. The Tranche 2 Option expires on February 12, 2014. The Tranche 2 Option exercise price is \$1.55 per share (which is a premium of \$0.82 to the closing price of \$0.73 on Nasdaq on August 12, 2011). If a

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change of control transaction occurs after Stockholder Approval and prior to February 12, 2014, the Tranche 2 Option will become immediately exercisable and will terminate unless exercised in connection with such change of control transaction.

Stockholders Agreement

Under the terms of the Stockholders Agreement:

(a) After closing on the purchase and sale of the Tranche 1 Shares, and, so long as TFG Radiant continues to hold at least fifteen percent (15%) of Company's outstanding common stock, the Company shall use its reasonable efforts to elect a designated representative of TFG Radiant to the Company's Board. As soon as practicable after the purchase and sale of the Tranche 2 Shares, if any, or at such other time as TFG Radiant beneficially owns at least twenty-five percent (25%) of the Company's outstanding common stock, the Company shall use its reasonable efforts to elect a second designated representative of TFG Radiant to the Board. TFG Radiant's rights to appoint any directors to the Board shall terminate in the event that the Company terminates the Joint Development Agreement in accordance with the terms thereof prior to the achievement of the Tranche 2 milestone.

(b) TFG Radiant has agreed that until August 12, 2013, it will not, without prior approval of the Board, acquire more than 36.5% of the Company's issued and outstanding common stock. These restrictions will terminate in certain circumstances, including if: (i) the Board solicits, or announces an intention to solicit, an offer by a third party to acquire at least 20% of the Company's common stock or assets (an Acquisition Proposal), (ii) the Board approves, accepts, authorizes or recommends an Acquisition Proposal, (iii) the Company enters into any letter of intent or agreement with respect to an Acquisition Proposal, (iv) a third party (other than TFG Radiant or Norsk Hydro) acquires or announces an intent to acquire at least 20% of Company's outstanding common stock, or (v) stockholder approval is not obtained for the issuance of the Tranche 2 Shares upon exercise of the Tranche 2 Option.

(c) TFG Radiant has received preemptive rights to purchase its pro rata share of future offerings by the Company of equity securities (or rights convertible into equity securities), with a limited number of customary exceptions.

(d) TFG Radiant and its affiliates have agreed to vote (or tender or exchange in the case of a tender or exchange offer) all shares of common stock beneficially owned in favor of certain acquisition proposals which (i) have been recommended by a majority of the Board and (ii) meet specified minimum per share price thresholds.

Registration Rights Agreement

Under the terms of the Registration Rights Agreement, in the event stockholder approval of the issuance of the Tranche 2 Shares is not obtained, TFG Radiant will be given certain demand and piggy-back registration rights with respect to the Tranche 1 Shares. If stockholder approval is obtained, then TFG Radiant will not receive any such registration rights.

Joint Development Agreement

Under the terms of the Joint Development Agreement:

(a) The parties will collaborate in order to allow TFG Radiant to (i) develop fabs that manufacture CIGS PV in an agreed upon territory in East Asia, and (ii) sell CIGS PV in such territory.

(b) TFG Radiant has committed to invest \$165 million to build an initial fab in East Asia using the Company's proprietary processes for manufacturing flexible CIGS PV.

(c) TFG Radiant agrees to pay to the Company certain specified non-recurring engineering funding.

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(d) The Company shall have the option to require TFG Radiant to purchase CIGS PV produced by the Company, subject to certain minimum volume and price thresholds.

(e) TFG Radiant has been granted an exclusive license to intellectual property owned by the Company or developed by the Company in 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.

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

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

(h) TFG Radiant will pay to the Company a license fee at the time of commissioning for each TFG Radiant Fab.

Voting Agreement

Under the terms of the Voting Agreement between TFG Radiant and Norsk Hydro, Norsk Hydro has agreed:

(a) To vote (or cause to be voted) in person or by proxy all shares beneficially owned by it in favor of the issuance of the Tranche 2 Shares upon exercise of the Tranche 2 Option.

(b) To vote (or cause to be voted) in person or by proxy all shares beneficially owned by it in favor of the proposal to increase the Company's authorized shares of common stock.

(c) To vote (or cause to be voted) in person or by proxy all shares beneficially owned by them in favor of TFG Radiant's Board designees which are designated in accordance with the Stockholders Agreement described above.

No Dissenters' Rights

Under applicable Delaware law, our stockholders are not entitled to dissenters' or appraisal rights with respect to the approval of the issuance of the Tranche 2 Shares.

Impact on Existing Stockholders

Before voting, each stockholder should consider the fact that the Alliance could provide substantial capital that would be important to the continuing operations of the Company and our efforts to initiate production and expand production capacity. As noted in "Reasons for the Alliance," additional cash will be needed to more effectively manage our projected future needs.

The Tranche 1 Shares were issued on August 12, 2011. The issuance of the Tranche 1 Shares was dilutive to the ownership percentage of Ascent's current stockholders. The price for the Tranche 1 Shares was \$1.15 per share (which was a premium of \$0.42 to the closing price of \$0.73 on Nasdaq on August 12, 2011), with gross proceeds to Ascent of \$7,360,000. The Tranche 1 Shares represent approximately 16.4% of our outstanding common stock, after giving effect to the issuance of the Tranche 1 Shares.

The exercise of the Tranche 2 Option and subsequent issuance of the Tranche 2 Shares is conditioned upon (among other things) Ascent receiving stockholder approval prior to such exercise. Accordingly, if Proposal 1 is approved and the Tranche 2 milestone is achieved, TFG Radiant may exercise the Tranche 2 Option at any time prior to February 12, 2014 at an exercise price of \$1.55 per share (which is a premium of \$0.82 to the closing price of \$0.73 on Nasdaq on August 12, 2011) with anticipated gross proceeds to Ascent of \$14,725,000. If

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Proposal 1 is approved and TFG Radiant exercises the Tranche 2 Option, the total shares issued to TFG Radiant in the Alliance would represent approximately [32.9]% of our outstanding common stock, after giving effect to the issuance of the Tranche 1 Shares and Tranche 2 Shares.

If the stockholders approve Proposal 1 and the Tranche 2 Option becomes exercisable, TFG Radiant could acquire approximately 36.2% of our outstanding common stock as of August 12, 2011, in the event of an exercise of the Tranche 2 Option and taking into account TFG Radiant's pre-Alliance ownership position. As a result, although exercise of the Tranche 2 Option will inject substantial capital into our accounts for use in sustaining and expanding our operations, the transactions will have a dilutive effect on our current stockholders whose aggregate percentage ownership in the Company will decline significantly as a result of the Alliance. TFG Radiant also will have representation on our Board.

If Proposal 1 is approved, the stockholders may suffer additional dilution if TFG Radiant elects to exercise the Tranche 2 Option. There is no guaranty that TFG Radiant will elect to exercise the Tranche 2 Option and, therefore, there can be no assurances that the exercise price of \$14,725,000 will ever be paid to the Company. If Proposal 1 is not approved, TFG Radiant will be prohibited from exercising the Tranche 2 Option.

Because TFG Radiant will own a significant percentage of our voting power, it may have considerable influence in determining the outcome of any corporate transaction or other matter submitted to our stockholders for approval, including the election of directors and approval of a merger, consolidation or the sale of all or substantially all of our assets. Taken together with Norsk Hydro's current position in the Company, these two investors could control a majority of our common stock. In addition, the ownership by these two investors of a substantial percentage of our total voting power could make it more difficult and expensive for a third party to pursue a change of control of our company, even if a change of control would generally be beneficial to our stockholders. Sales in the public market of the Tranche 1 Shares or Tranche 2 Shares, or the perception that such sales could occur, could adversely affect the prevailing market price of our common stock and impair our ability to raise funds in additional stock financings. If Proposal 1 is not approved, TFG Radiant will not be allowed to exercise the Tranche 2 Option for the Tranche 2 Shares.

All shares of common stock issued or issuable to TFG Radiant will be restricted securities. Under the terms of the Registration Rights Agreement, in the event stockholder approval of the issuance of the Tranche 2 Shares is not obtained, TFG Radiant will be given demand and piggy-back registration rights with respect to the Tranche 1 Shares. In such event, TFG Radiant may initiate a demand registration at any time after August 12, 2012. Upon registration, these shares will become generally available for immediate resale in the public market. The market price of our common stock could fall as a result of such resales due to the increased number of shares of common stock available for sale in the market.

Vote Required

A majority of the votes properly cast in person or by proxy on the proposal at the Special Meeting will be required to approve the issuance of the Tranche 2 Shares. The Tranche 1 Shares issued to TFG Radiant in the Alliance, however, are not entitled to vote on such proposal.

Norsk Hydro has agreed to vote all shares it holds in favor of this proposal.

Recommendation

Our Board of Directors has determined that the option granted to and investment by TFG Radiant are advisable and in the best interests of the Company and recommends that stockholders vote FOR the approval of the issuance of the Tranche 2 Shares upon exercise of the Tranche 2 Option.

Unless marked otherwise, proxies received will be voted FOR the approval of the issuance of the Tranche 2 Shares upon exercise of the Tranche 2 Option.

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PROPOSAL NO. 2 APPROVAL OF AN INCREASE IN THE NUMBER OF AUTHORIZED SHARES

Overview

The Company's Board of Directors has adopted, declared advisable and is submitting for stockholder approval an amendment to the Company's Amended and Restated Certificate of Incorporation to increase the number of authorized shares of the Company's common stock from 75,000,000 to 125,000,000. On [] 2011, there were [] shares of the Company's common stock outstanding. In addition, [] shares of common stock were reserved for issuance in connection with the Company's various employee benefit and compensation plans, 9,500,000 shares of common stock were reserved for issuance in connection with the exercise of the Tranche 2 Option by TFG Radiant. This leaves [] shares of common stock available for future use.

The Company's Amended and Restated Certificate of Incorporation also authorizes the issuance of 25,000,000 shares of preferred stock. On [] 2011, no shares of preferred stock were designated or outstanding. The proposed amendment does not increase the number of shares of preferred stock that the Company is authorized to issue.

Form of the Amendment

If stockholders approve this proposal, the Company's Amended and Restated Certificate of Incorporation will be amended to increase the number of shares of common stock the Company is authorized to issue from 75,000,000 to 125,000,000. The par value of the common stock will remain at \$0.0001 per share. The amendment would amend the first sentence of Article 4 of the Company's Amended and Restated Certificate of Incorporation to read in its entirety as follows:

The total number of shares of all classes of stock that the Corporation shall have authority to issue is one hundred twenty-five million (125,000,000) shares of common stock, having a par value of \$0.0001 per share, and twenty-five million (25,000,000) shares of preferred stock, having a par value of \$0.0001 per share.

The remaining text of Article 4 of the Company's Amended and Restated Certificate of Incorporation will remain unchanged.

Purpose of the Amendment

The Board is recommending this increase in authorized shares of common stock primarily to give the Company appropriate flexibility to issue shares for future corporate needs. The shares may be issued by the Board in its discretion, subject to any further stockholder action required in the case of any particular issuance by applicable law, regulatory agency, or under the rules of the Nasdaq Stock Market. The newly authorized shares of common stock would be issuable for any proper corporate purpose, including future acquisitions, investment opportunities, capital raising transactions of equity or convertible debt securities, stock splits, stock dividends, issuance under current or future equity compensation plans, employee stock plans and savings plans or for other corporate purposes. There are no immediate agreements, plans, arrangements, commitments or understandings with respect to issuance of any of the additional shares of common stock that would be authorized by the proposed amendment. However, the Board believes that these additional shares will provide the Company with needed ability to issue shares in the future to take advantage of market conditions or favorable opportunities without the potential expense or delay incident to obtaining stockholder approval for a particular issuance.

Rights of Additional Authorized Shares

The additional authorized shares of common stock, if and when issued, would be part of the existing class of common stock and would have the same rights and privileges as the shares of common stock currently outstanding. Generally, the Company's stockholders do not have preemptive rights with respect to its common

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stock. Accordingly, should the Board of Directors elect to issue additional shares of common stock, existing stockholders would not have any preferential rights to purchase the shares. The Company, however, has entered into certain stockholders agreements with each of Norsk Hydro and TFG Radiant which grant such stockholders certain preemptive rights to purchase securities of the Company.

Potential Adverse Effects of the Amendment

Future issuances of common stock or securities convertible into common stock could have a dilutive effect on the earnings per share, book value per share, voting power and percentage interest of holdings of current stockholders. In addition, the availability of additional shares of common stock for issuance could, under certain circumstances, discourage or make more difficult efforts to obtain control of the Company. The Board is not aware of any attempt, or contemplated attempt, to acquire control of the Company. This proposal is not being presented with the intent that it be used to prevent or discourage any acquisition attempt, but nothing would prevent the Board from taking any appropriate actions not inconsistent with its fiduciary duties.

Effectiveness of the Amendment and Vote Required

If the proposed amendment is adopted, it will become effective upon the filing of a certificate of amendment to the Company's Amended and Restated Certificate of Incorporation with the Secretary of State of the State of Delaware. The adoption of this amendment requires the approval of a majority of the outstanding shares of common stock.

Each of TFG Radiant and Norsk Hydro have agreed to vote all shares held by them in favor of the proposed amendment.

Recommendation

The Board recommends that shareholders vote **FOR** the proposal to amend the Company's Amended and Restated Certificate of Incorporation to increase the number of authorized shares of the Company's common stock.

Unless marked otherwise, proxies received will be voted FOR the proposal to amend the Company's Amended and Restated Certificate of Incorporation to increase the number of authorized shares of the Company's common stock.

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WHERE TO FIND MORE INFORMATION

The SEC allows us to incorporate by reference information into this proxy statement, which means that we can disclose important information to you by referring you to another document that we filed separately with the SEC. Information in this proxy statement updates and, in some cases, supersedes information incorporated by reference from documents that we have filed with the SEC prior to the date of this proxy statement, while information that we file later with the SEC will automatically update and, in some cases, supersede the information in this proxy statement.

The following documents and information previously filed with the SEC are incorporated by reference into this proxy statement:

our Annual Report on Form 10-K for the fiscal year ended December 31, 2010, filed with the SEC on February 28, 2011;

our Quarterly Reports on Form 10-Q for the quarterly periods ended March 31, 2011 (filed with the SEC on April 28, 2011) and June 30, 2011 (filed with the SEC on August 15, 2011);

our Current Reports on Form 8-K filed with the SEC on April 6, 2011, June 16, 2011 and August 15, 2011.

In particular, our financial statements and management's discussion and analysis of financial condition and results of operations are incorporated by reference to our Quarterly Report, and our quantitative and qualitative disclosures about market risks are incorporated by reference to our Annual Report.

In addition, all documents we file under Section 13(a), 13(c), 14 or 15(d) of the Exchange Act after the date of this proxy statement and before the date of the special meeting are incorporated by reference into and deemed a part of this proxy statement from the date of filing of those documents.

As a stockholder, we may have sent you some of the documents incorporated by reference, but anyone can obtain any of them through us or the SEC. Documents incorporated by reference are available from us without charge, excluding all exhibits unless we have specifically incorporated by reference an exhibit in this proxy statement. You may obtain documents that we have filed with the SEC and incorporated by reference in this document, without charge, by making a request to us as follows:

Corporate Secretary

Ascent Solar Technologies, Inc.

12300 Grant Street

Thornton, Colorado 80241

Telephone: (720) 872-5000

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 2012 Annual Meeting of Stockholders, a stockholder proposal must be received in writing at our offices, 12300 Grant Street, Thornton, Colorado 80241, no later than December 29, 2011.

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Stockholder Proposals Not to be Included in the Proxy Statement

If you wish to make a stockholder proposal at the 2012 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 16, 2012 and March 17, 2012. Furthermore, a proxy for our 2012 Annual Meeting of Stockholders may confer discretionary authority to vote on any matter not submitted to us by March 13, 2012.

OTHER BUSINESS

We know of no other matters to be submitted to the stockholders at the Special Meeting. If any other matters properly come before the stockholders at the Special 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

Ron Eller

President and Chief Executive Officer

[], 2011

Thornton, Colorado

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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 October 10, 2011.

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. **X**

q IF YOU HAVE NOT VOTED VIA THE INTERNET OR TELEPHONE, FOLD ALONG THE PERFORATION, DETACH AND RETURN THE BOTTOM PORTION IN THE ENCLOSED ENVELOPE. q

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A Proposals Board of Directors recommends a vote **FOR Proposal 1 and FOR Proposal 2.**

For Against Abstain

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1. To approve the issuance of 9,500,000 shares of common stock upon the exercise of the option granted to TFG Radiant Investment Group Ltd.

..

For Against Abstain

2. To approve an increase in the number of authorized shares of the Company's common stock from 75,000,000 to 125,000,000.

..

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

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q IF YOU HAVE NOT VOTED VIA THE INTERNET OR TELEPHONE, FOLD ALONG THE PERFORATION,
DETACH AND RETURN THE BOTTOM PORTION IN THE ENCLOSED ENVELOPE. q

Proxy ASCENT SOLAR TECHNOLOGIES, INC.

12300 Grant Street

Thornton, CO 80241

SPECIAL MEETING OF STOCKHOLDERS TO BE HELD ON OCTOBER , 2011

THIS PROXY IS SOLICITED ON BEHALF OF THE BOARD OF DIRECTORS

The undersigned hereby appoints Ron Eller 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 , October , 2011, at 2:00 p.m., local time, at the Company's offices, 12300 Grant Street, Thornton, Colorado, and at any adjournment thereof (the Special 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 Special Meeting or any adjournments or postponements thereof.

UNLESS OTHERWISE DIRECTED, THIS PROXY WILL BE VOTED FOR PROPOSAL 1, FOR PROPOSAL 2 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.