

**UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, DC 20549**

FORM S-8

**REGISTRATION STATEMENT UNDER
THE SECURITIES ACT OF 1933**

SunPower Corporation

(Exact name of registrant as specified in its charter)

Delaware
(State or other jurisdiction of incorporation or organization)

94-3008969
(I.R.S. Employer Identification No.)

**3939 North First Street
San Jose, California**
(Address of Principal Executive Offices)

95134
(Zip Code)

**Second Amended and Restated
SunPower Corporation 2005 Stock Incentive Plan**
(Full title of the plan)

**Bruce R. Ledesma, Esq.
General Counsel
SunPower Corporation
3939 North First Street
San Jose, California 95134**
(Name and address of agent for service)

(408) 240-5500
(Telephone number, including area code, of agent for service)

Copies to:
**R. Todd Johnson, Esq.
Stephen E. Gillette, Esq.
Jones Day
1755 Embarcadero Road
Palo Alto, California 94303
(650) 739-3939**

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, or a smaller reporting company.

Large accelerated filer ☒ x

Non-accelerated filer ☐ (Do not check if a smaller reporting company)

Accelerated filer ☐

Smaller reporting company ☐

CALCULATION OF REGISTRATION FEE

Title of Securities To Be Registered	Amount To Be Registered (1) (2)	Proposed Maximum Offering Price Per Share (3)	Proposed Maximum Aggregate Offering Price (3)	Amount of Registration Fee
Class A Common Stock, par value \$0.001 per share	8,882,331	\$ 17.93	\$ 159,260,195	\$ 18,491

- (1) Represents shares of Class A Common Stock, par value \$0.001 per share (the “Common Stock”), of SunPower Corporation, a Delaware corporation (the “Registrant”), approved for issuance pursuant to the Second Amended and Restated SunPower Corporation 2005 Stock Incentive Plan (the “Plan”). Each share of Common Stock includes a right to purchase shares of a participating series of the Registrant’s preferred stock.
- (2) Pursuant to Rule 416 of the Securities Act of 1933 (the “Securities Act”), this Registration Statement also covers such additional shares of Common Stock as may become issuable pursuant to the anti-dilution provisions of the Plan.
- (3) Estimated solely for purposes of calculating the amount of the registration fee, calculated pursuant to paragraphs (c) and (h) of Rule 457 of the General Rules and Regulations under the Securities Act, on the basis of the average of the high and low sales prices of the Common Stock on February 23, 2011 as reported on the Nasdaq Global Select Market.

EXPLANATORY NOTE

This Registration Statement on Form S-8 registers the offer and sale of 8,882,331 shares of the Registrant's Common Stock issuable under the Registrant's Second Amended and Restated SunPower Corporation 2005 Stock Incentive Plan (the "Plan"). The stockholders of the Registrant previously approved increases in the number of shares of Common Stock reserved for issuance under the Plan, including automatic annual increases beginning in fiscal 2009 through 2015 that is equal to the lower of three percent of the outstanding shares of all classes of the Registrant's common stock measured on the last day of the immediately preceding fiscal quarter, 6.0 million shares, or such other number of shares as determined by the Registrant's Board of Directors. The total of such stockholder approved increases to the Plan that was not previously registered with the Securities and Exchange Commission (the "Commission") are being registered herein.

The contents of the Registrant's Form S-8 Registration Statements filed with the Commission on December 15, 2005 (File No. 333-130340), May 7, 2007 (File No. 333-142679) and May 9, 2008 (File No. 333-150789) are hereby incorporated herein by reference.

PART II INFORMATION REQUIRED IN THE REGISTRATION STATEMENT

Item 3. Incorporation of Documents by Reference.

The following documents have been filed by the Registrant with the Commission and are incorporated herein by reference:

- (a) The Registrant's Annual Report on Form 10-K for the year ended January 2, 2011;
 - (b) The Registrant's Current Reports on Form 8-K filed January 3, 2011 and February 3, 2011; and
 - (c) The description of the Registrant's Class A Common Stock included in the Registrant's Form 8-A filed on October 31, 2005, and any amendment or report the Registrant may file with the Commission for the purpose of updating such description.
 - (d) The description of the Class A rights issued pursuant to the Rights Agreement, dated as of August 12, 2008, between the Registrant and Computershare Trust Company, N.A., as rights agent, included in the Registrant's Form 8-A filed on August 25, 2008, and any amendment or report the Registrant may file with the Commission for the purpose of updating such description.
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All documents filed by the Registrant with the Commission pursuant to Sections 13(a), 13(c), 14 and 15(d) of the Securities Exchange Act of 1934 (the “Exchange Act”) subsequent to the date of this registration statement and prior to the filing of a post-effective amendment indicating that all securities offered have been sold or deregistering all securities then remaining unsold, will be deemed to be incorporated by reference in this registration statement and to be part hereof from the date of filing of such documents. Any statement contained in any document incorporated or deemed to be incorporated by reference herein will be deemed to be modified or superseded for purposes of this Registration Statement to the extent that a statement contained herein or in any other subsequently filed document which also is or is deemed to be incorporated by reference herein modifies or supersedes such statement. Any such statement so modified or superseded will not be deemed, except as modified or superseded, to constitute a part of this Registration Statement.

Item 6. Indemnification of Directors and Officers

Section 145(a) of the Delaware General Corporation Law (the “DGCL”) provides that a corporation may indemnify any person who was or is a party or is threatened to be made a party to any threatened, pending or completed action, suit or proceeding, whether civil, criminal, administrative or investigative (other than an action by or in the right of the corporation) by reason of the fact that such person is or was a director, officer, employee or agent of the corporation, or is or was serving at the request of the corporation as a director, officer, employee or agent of another corporation, partnership, joint venture, trust or other enterprise, against expenses (including attorneys’ fees), judgments, fines and amounts paid in settlement actually and reasonably incurred by the person in connection with such action, suit or proceeding if the person acted in good faith and in a manner the person reasonably believed to be in or not opposed to the best interests of the corporation, and, with respect to any criminal action or proceeding, had no reasonable cause to believe his or her conduct was unlawful.

Section 145(b) of the DGCL provides that a corporation may indemnify any person who was or is a party or is threatened to be made a party to any threatened, pending or completed action or suit by or in the right of the corporation to procure a judgment in its favor by reason of the fact that such person acted in any of the capacities set forth above, against expenses (including attorneys’ fees) actually and reasonably incurred by such person in connection with the defense or settlement of such action or suit if the person acted in good faith and in a manner the person reasonably believed to be in or not opposed to the best interests of the corporation, except that no indemnification shall be made in respect of any claim, issue or matter as to which such person shall have been adjudged to be liable to the corporation, unless and only to the extent that the court in which such action or suit was brought shall determine that, despite the adjudication of liability but in view of all the circumstances of the case, such person is fairly and reasonably entitled to indemnity for such expenses which the court shall deem proper.

Further subsections of Section 145 of the DGCL provide that:

- to the extent a present or former director or officer of a corporation has been successful on the merits or otherwise in defense of any action, suit or proceeding referred to in subsections (a) and (b) of Section 145 or in defense of any claim, issue or matter therein, such person shall be indemnified against expenses (including attorneys’ fees) actually and reasonably incurred by such person in connection therewith;
- the indemnification and advancement of expenses provided for pursuant to Section 145 shall not be deemed exclusive of any other rights to which those seeking indemnification or advancement of expenses may be entitled under any bylaw, agreement, vote of stockholders or disinterested directors or otherwise; and
- the corporation shall have the power to purchase and maintain insurance on behalf of any person who is or was a director, officer, employee or agent of the corporation, or is or was serving at the request of the corporation as a director, officer, employee or agent of another corporation, partnership, joint venture, trust or other enterprise, against any liability asserted against such person and incurred by such person in any such capacity, or arising out of such person’s status as such, whether or not the corporation would have the power to indemnify such person against such liability under Section 145.

Article VIII of the Registrant’s restated certificate of incorporation (i) authorizes the indemnification of directors and officers (the “Indemnitees”) to the fullest extent authorized by the DGCL, (ii) provides for the advancement of expenses to the Indemnitees for defending any proceedings related to the specified circumstances, and (iii) authorizes the Registrant to maintain certain policies of insurance to protect itself and any of its directors, officers or employees.

The Registrant has entered into agreements to indemnify certain of its directors and executive officers in addition to the indemnification provided for in its restated certificate of incorporation and amended and restated bylaws. These agreements, among other things, provide for indemnification of the Registrant’s directors and executive officers for expenses, judgments, fines and settlement amounts incurred by any of these people in any action or proceeding arising out of his or her services as a director or executive officer of the Registrant or at the Registrant’s request.

The foregoing is only a general summary of certain aspects of Delaware law and the Registrant's restated certificate of incorporation dealing with indemnification of directors and officers, and does not purport to be complete. It is qualified in its entirety by reference to the detailed provisions of Section 145 of the DGCL and the Registrant's restated certificate of incorporation.

Item 8. Exhibits

See the attached Exhibit Index, which is incorporated herein by reference.

Item 9. Undertakings

1. The undersigned Registrant hereby undertakes:

(a) To file, during any period in which offers or sales are being made, a post-effective amendment to this Registration Statement:

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

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

(iii) To include any material information with respect to the plan of distribution not previously disclosed in the Registration Statement or any material change to such information in the Registration Statement;

Provided, however, that paragraphs (1)(a)(i) and (1)(a)(ii) of this Item 9 do not apply if the information required to be included in a post-effective amendment by those paragraphs is contained in reports filed with or furnished to the Commission by the Registrant pursuant to section 13 or section 15(d) of the Exchange Act that are incorporated by reference herein.

(b) That, for the purpose of determining any liability under the Securities Act, each such post effective amendment shall be deemed to be a new registration statement relating to the securities offered herein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.

(c) To remove from registration by means of a post-effective amendment any of the securities being registered which remain unsold at the termination of the offering.

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

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

SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, the Registrant certifies that it has reasonable grounds to believe that it meets all of the requirements for filing on Form S-8 and has duly caused this Registration Statement to be signed on its behalf by the undersigned, thereunto duly authorized, in the City of Richmond, State of California, on this 25th day of February, 2011.

SUNPOWER CORPORATION

By: /s/ Bruce R. Ledesma

Name: Bruce R. Ledesma

Title: Executive Vice President, General Counsel and Corporate Secretary

POWER OF ATTORNEY

KNOW ALL MEN BY THESE PRESENTS, that each person whose signature appears below hereby constitutes and appoints Thomas H. Werner, Dennis V. Arriola and Bruce R. Ledesma, and each of them, as his/her true and lawful attorney or attorneys in fact and agents, each acting alone, with full power of substitution and resubstitution, for him/her and in his/her name, place and stead, in any and all capacities, to sign any or all amendments (including post-effective amendments) to the Registration Statement on Form S-8, and to file the same, with all exhibits thereto, and all documents in connection therewith, with the Securities and Exchange Commission, granting unto said attorneys-in-fact and agents, full power and authority to do and perform each and every act and thing requisite and necessary to be done in and about the premises, as fully to all intents and purposes as he/she might or could do in person, hereby ratifying and confirming all that said attorneys-in-fact and agents, each acting alone, or his substitute or substitutes, may lawfully do or cause to be done by virtue hereof.

Pursuant to the requirements of the Securities Act of 1933, this Registration Statement has been signed by the following persons in the capacities and on the dates indicated.

SIGNATURE

TITLE

DATE

/s/ Thomas H. Werner

Thomas H. Werner

President, Chief Executive Officer and Director
(Principal Executive Officer)

February 25, 2011

/s/ Dennis V. Arriola

Dennis V. Arriola

Executive Vice President and Chief Financial
Officer (Principal Financial and Accounting
Officer)

February 25, 2011

/s/ Betsy S. Atkins

Betsy S. Atkins

Director

February 25, 2011

/s/ Uwe-Ernst Buße

Uwe-Ernst Buße

Director

February 25, 2011

/s/ Thomas R. McDaniel

Thomas R. McDaniel

Director

February 25, 2011

/s/ Pat Wood, III

Pat Wood, III

Director

February 25, 2011

Exhibit Index

Exhibit Number	Description of Exhibit
4.1	Second Amended and Restated SunPower Corporation 2005 Stock Incentive Plan and forms of agreements thereunder (incorporated herein by reference to Exhibit 4.3 to the Registrant's Registration Statement on Form S-8 filed with the Securities and Exchange Commission on May 9, 2008)
4.2	Amendment to Second Amended and Restated SunPower Corporation 2005 Stock Incentive Plan (incorporated herein by reference to Exhibit 10.6 to the Registrant's Quarterly Report on Form 10-Q for the quarter ended March 29, 2009 filed with the Securities and Exchange Commission on May 8, 2009)
5.1*	Opinion of Jones Day
23.1*	Consent of PricewaterhouseCoopers LLP, independent registered public accountants
23.4*	Consent of Jones Day (included in Exhibit 5.1)
24.1*	Powers of Attorney (included in this Registration Statement under "Signatures")

* Filed herewith.

JONES DAY

1755 EMBARCADERO ROAD • PALO ALTO, CALIFORNIA 94303
TELEPHONE: (650) 739-3939 • FACSIMILE: (650) 739-3900

February 25, 2011

SunPower Corporation
3939 North First Street
San Jose, California 95134

Re: Registration Statement on Form S-8 Filed by SunPower Corporation

Ladies and Gentlemen:

We have acted as counsel for SunPower Corporation, a Delaware corporation (the “**Company**”), in connection with the registration of 8,882,331 shares of the Company’s Class A common stock, par value \$0.001 per share (the “**Shares**”), issuable pursuant to the SunPower Corporation Second Amended and Restated 2005 Stock Incentive Plan (the “**Plan**”). In connection with the opinion expressed herein, we have examined such documents, records and matters of law as we have deemed relevant or necessary for purposes of this opinion. Based on the foregoing, and subject to the further limitations, qualifications and assumptions set forth herein, we are of the opinion that the Shares that may be issued or delivered and sold pursuant to the Plan and the authorized forms of stock option, restricted stock or other applicable award agreements thereunder will be, when issued or delivered and sold in accordance with the Plan and such agreements, validly issued, fully paid and nonassessable, provided that the consideration for such shares is at least equal to the stated par value thereof.

The opinion expressed herein is limited to the General Corporation Law of the State of Delaware, including the applicable provisions of the Delaware Constitution and the reported judicial decisions interpreting such law, in each case as currently in effect, and we express no opinion as to the effect of the laws of any other jurisdiction. In addition, we have assumed that the resolutions authorizing the Company to issue or deliver and sell the Common Stock pursuant to the Plan and the applicable award agreements will be in full force and effect at all times at which such shares of Common Stock are issued or delivered or sold by the Company, and the Company will take no action inconsistent with such resolutions.

In rendering the opinion above, we have assumed that each award under the Plan will be approved by the Board of Directors of the Company or an authorized committee of the Board of Directors.

We hereby consent to the filing of this opinion as Exhibit 5.1 to the Registration Statement on Form S-8 filed by the Company to effect registration of the Shares to be issued and sold pursuant to the Plan under the Securities Act of 1933 (the “**Act**”). In giving such consent, we do not thereby admit that we are included in the category of persons whose consent is required under Section 7 of the Act or the rules and regulations of the Securities and Exchange Commission promulgated thereunder.

Very truly yours,

/S/ JONES DAY

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We hereby consent to the incorporation by reference in this Registration Statement on Form S-8 of our report dated February 25, 2011 relating to the financial statements, financial statement schedule and the effectiveness of internal control over financial reporting, which appears in SunPower Corporation's Annual Report on Form 10-K for the year ended January 2, 2011.

/s/ PricewaterhouseCoopers LLP
San Jose, CA
February 25, 2011
