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

**FORM 10-Q**

**(Mark One)**

☒ **QUARTERLY REPORT PURSUANT TO SECTION 13 OR 15 (d) OF THE SECURITIES EXCHANGE ACT OF 1934**

**For the quarterly period ended June 30, 2019**

**or**

☐ **TRANSITION REPORT PURSUANT TO SECTION 13 OR 15 (d) OF THE SECURITIES EXCHANGE ACT OF 1934**

**For the transition period from _______ to _______**

**Commission File Number 001-34044**

# REAL GOODS SOLAR, INC.

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

| | |
|---|---|
| **COLORADO** | **26-1851813** |
| **(State or other jurisdiction of incorporation or organization)** | **(I.R.S. Employer Identification No.)** |

**110 16th Street, Suite 300**
**DENVER, COLORADO 80202**
**(Address of principal executive offices)**

**(303) 222-8300**
**(Registrant's telephone number, including area code)**

**Securities registered pursuant to Section 12(b) of the Securities Exchange Act of 1934:**

| Title of Each Class | Trading Symbol(s) | Name of Each Exchange on Which Registered |
|---|---|---|
| N/A | N/A | N/A |

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. YES ☒ NO ☐

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§ 232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit such files). Yes ☒ No ☐

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

| | | | |
|---|---|---|---|
| Large accelerated filer | ☐ | Accelerated filer | ☐ |
| Non-accelerated filer | ☒ | Smaller reporting company | ☒ |
| | | Emerging growth company | ☐ |

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act. ☐

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Act.) YES ☐ NO ☒

As of August 12, 2019, 115,521,830 shares of the registrant's Class A common stock and no shares of the registrant's Class B common stock were outstanding.

**FORM 10-Q**

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**CAUTIONARY STATEMENT REGARDING FORWARD-LOOKING STATEMENTS**

This report may contain forward-looking statements within the meaning of the U.S. Private Securities Litigation Reform Act of 1995 that involve risks and uncertainties, including statements regarding the Company's results of operations and financial positions, and the Company's business and financial strategies. Forward-looking statements are neither historical facts nor assurances of future performance. Instead, they provide our current beliefs, expectations, assumptions and forecasts about future events, and include statements regarding our future results of operations and financial position, business strategy, budgets, projected costs, plans and objectives of management for future operations. The words "anticipate," "believe," "plan," "estimate," "expect," "future," "intend," "strategy," "likely," "seek," "may," "will" and similar expressions as they relate to us are intended to identify such forward-looking statements. Because forward-looking statements relate to the future, they are subject to inherent uncertainties, risks and changes in circumstances that are difficult to predict and many of which are outside of our control. Our actual results and financial condition may differ materially from those indicated in the forward-looking statements. Therefore, you should not rely on any of these forward-looking statements.

Important factors that could cause our actual results and financial condition to differ materially from those indicated in the forward-looking statements include, without limitation, the following: our history of operating losses; our ability to implement our revenue growth strategy, achieve our target level of sales, generate cash flow from operations, and achieve break-even and better results; our ability to achieve profitability; our ability to generate breakeven cash flow to fund our operations; our success in implementing our plans to increase future sales, and installations and revenue; rules, regulations and policies pertaining to electricity pricing and technical interconnection of customer-owned electricity generation such as net energy metering; the continuation and level of government subsidies and incentives for solar energy; existing and new regulations impacting solar installations including electric codes; future shortages in supplies for solar energy systems; the adoption and general demand for solar energy; the impact of a drop in the price of conventional energy on demand for solar energy systems; seasonality of customer demand and adverse weather conditions inhibiting the installation of solar energy systems; changing and updating technologies and the issues presented by these new technologies related to customer demand and our product offering; non-compliance with or loss or suspension of licenses required for installation of solar energy systems; loss of key personnel and ability to attract necessary personnel; our failure to accurately predict future warranty claims; adverse outcomes arising from litigation and legal disputes to which we may be subject from time to time; our ability to continue to obtain services and components from suppliers, installers and other vendors; disruption of our supply chain from equipment manufacturers and potential shortages of components for solar energy systems; factors impacting the timely installation of solar energy systems; competition; costs associated with safety and construction risks; continued access to competitive third party financiers to finance customer, roofer and homebuilder solar or POWERHOUSE™ 3.0 installations; the ability to obtain requisite international product certification of POWERHOUSE™ 3.0; our ability to successfully and timely commercialize POWERHOUSE™ 3.0 during 2019 and in future years achieve market share; our ability to satisfy the conditions and our obligations under the POWERHOUSE™ 3.0 license agreement; our ability to manage supply chain in order to have production levels and pricing of the POWERHOUSE™ 3.0 shingles to be competitive; our ability to realize profitable revenue growth from the sale of POWERHOUSE™ 3.0, and to the extent, anticipated; our ability to realize revenue from sales of POWERHOUSE™ arising from the California Energy Commissions' mandate for solar systems with new home building commencing in 2020; our ability to increase the rate of participation within our network; our ability to obtain purchase orders for POWERHOUSE™ 3.0 deliveries; competition in the built-in photovoltaic solar system business; our ability to successfully and timely expand our POWERHOUSE™ 3.0 business outside of the United States; increases in the cost of materials as a result of changes in the price of oil and foreign currency exchange risks; intellectual property infringement claims related to the POWERHOUSE™ 3.0 business; the performance of the Solar Division; our ability to realize revenue from backlog and sales pipeline for POWERHOUSE™; the adequacy of, and access to, capital necessary to implement our revenue growth strategy; whether we will receive any proceeds from exercise of Class A common stock warrants; changes in general economic, business and political conditions, including tariffs or trade remedies regarding imported solar panels, cells, inverters, batteries or other products related to our business and changes in the financial markets; our ability to meet customer expectations; risks and liabilities associated with placing employees and technicians in our customers' homes and businesses; product liability claims; whether we will realize increased market penetration from our brand and network supporting activities; the probability of the occurrence and potential magnitude of cybersecurity incidents; the adequacy of preventative actions taken to reduce cybersecurity risks and the associated costs, including, if appropriate, discussing the limits of our ability to prevent or mitigate certain cybersecurity risks; future data security breaches or our inability to protect personally identifiable information or other information about our employees and customers; the volatile market price of our Class A common stock; the low likelihood that we will pay any cash dividends on our Class A common stock for the foreseeable future; anti-takeover provisions in our organizational documents; the terms of some of our outstanding securities and transaction documents entered into in connection with past offerings restrict our ability to enter into certain transactions or obtain financing, and could result in our paying premiums or penalties to the holders of some of our outstanding securities; our ability to identify or complete a strategic alternative that yields value for our shareholders; and such other factors as discussed throughout Part I, Item 1A, Risk Factors and Part II, Item 7, Management's Discussion and Analysis of Financial Conditions and Results of Operations included in our Annual Report on Form 10-K for the year ended December 31, 2018 ("2018 10-K") and Part I, Item 2, Management's Discussion and Analysis of Financial Conditions and Results of Operations and Part II, Item 1A, Risk Factors included in our Quarterly Report on Form 10-Q for the period ended March 31, 2019 and this report.

Any forward-looking statement made by us in this report is based only on information currently available to us and speaks only as of the date on which it is made. We undertake no obligation to publicly update any forward-looking statement, whether written or oral, that may be made from time to time, whether as a result of new information, future developments or otherwise, except as required by applicable law.

## PART I – FINANCIAL INFORMATION

**Item 1. Financial Statements**

**REAL GOODS SOLAR, INC.**
**Condensed Consolidated Balance Sheets (unaudited)**

| (in thousands, except share and per share data) | June 30, 2019 | December 31, 2018 |
|---|---|---|
| **ASSETS** | | |
| Current assets: | | |
| Cash | $ 1,696 | $ 5,831 |
| Accounts receivable, net | 985 | 1,340 |
| Costs in excess of billings | 92 | 11 |
| Inventory, net | 4,638 | 1,595 |
| Deferred costs on uncompleted contracts | 206 | 236 |
| Other current assets | 1,048 | 1,613 |
| Total current assets | 8,665 | 10,626 |
| Property and equipment, net | 635 | 778 |
| POWERHOUSE™ license, net | 3,245 | 3,202 |
| Operating lease right-of-use asset | 1,464 | - |
| Net investment in sales-type leases and other assets | 1,476 | 1,654 |
| Total assets | $ 15,485 | $ 16,260 |
| **LIABILITIES AND SHAREHOLDERS' EQUITY** | | |
| Current liabilities: | | |
| Convertible debt, net | $ - | $ 336 |
| Accounts payable | 2,444 | 862 |
| Accrued liabilities | 2,105 | 1,811 |
| Operating lease liability | 616 | - |
| Deferred revenue and other current liabilities | 921 | 716 |
| Total current liabilities | 6,086 | 3,725 |
| Other liabilities | 954 | 1,242 |
| Operating lease liability | 894 | - |
| Common stock warrant liabilities | 3,766 | 511 |
| Total liabilities | 11,700 | 5,478 |
| Commitments and contingencies | | |
| | | |
| Mezzanine equity: | | |
| Redeemable placement agent common stock warrants | 195 | - |
| | | |
| Shareholders' equity: | | |
| Preferred stock, par value $.0001 per share; 50,000,000 shares authorized; no shares issued and outstanding | - | - |
| Class A common stock, par value $.0001 per share; 150,000,000 shares authorized; 114,021,830 and 91,859,638 shares issued and outstanding at June 30, 2019 and December 31, 2018, respectively | 19 | 17 |
| Class B common stock, par value $.0001 per share; 50,000,000 shares authorized; no shares issued and outstanding | - | - |
| Additional paid-in capital | 255,715 | 253,331 |
| Accumulated deficit | (252,144) | (242,566) |
| Total shareholders' equity | 3,590 | 10,782 |
| Total liabilities, mezzanine equity and shareholders' equity | $ 15,485 | $ 16,260 |

See accompanying notes.

**REAL GOODS SOLAR, INC.**
**Condensed Consolidated Statements of Operations (unaudited)**

| (in thousands, except per share data) | For the Three Months Ended June 30, 2019 | For the Three Months Ended June 30, 2018 | For the Six Months Ended June 30, 2019 | For the Six Months Ended June 30, 2018 |
|---|---|---|---|---|
| Contract revenue: | | | | |
| Sale and installation of solar energy systems | $ 1,887 | $ 3,358 | $ 3,443 | $ 5,879 |
| POWERHOUSE™ Sales | 106 | - | 171 | - |
| Service | 293 | 196 | 821 | 484 |
| Leasing, net | 8 | 14 | 21 | 29 |
| Contract expenses: | | | | |
| Installation of solar energy systems | 1,780 | 3,008 | 3,686 | 5,801 |
| POWERHOUSE™ manufacturing | 270 | 4 | 437 | 5 |
| Service | 278 | 340 | 719 | 732 |
| Customer acquisition | 529 | 793 | 1,613 | 1,981 |
| Contract loss | (563) | (577) | (1,999) | (2,127) |
| Operating expense | 2,640 | 2,250 | 5,656 | 4,974 |
| Goodwill Impairment | - | 1,338 | - | 1,338 |
| Litigation | 149 | 44 | 199 | 161 |
| Operating loss | (3,352) | (4,209) | (7,854) | (8,600) |
| Change in fair value of derivative liabilities and loss on debt extinguishment | (1,502) | (3,073) | (1,445) | (3,046) |
| Amortization of debt discount and deferred loan costs | (234) | (1,435) | (287) | (1,435) |
| Other income | 12 | 955 | 20 | 985 |
| Net loss | $ (5,076) | $ (7,762) | $ (9,566) | $ (12,096) |
| Net loss per share – basic and diluted: | | | | |
| Basic and Diluted | $ (0.05) | $ (0.72) | $ (0.09) | $ (1.15) |
| Weighted-average shares outstanding: | | | | |
| Basic and Diluted | 109,521 | 10,757 | 101,242 | 10,485 |

See accompanying notes.

**REAL GOODS SOLAR, INC.**
**Condensed Consolidated Statement of Changes in Equity (unaudited)**

| (in thousands, except share data) | Class A Common Stock Shares | Class A Common Stock Amount | Additional Paid - in Capital | Accumulated Deficit | Total Shareholders' Equity (Deficit) | Mezzanine Equity |
|---|---|---|---|---|---|---|
| **Balance, January 1, 2018** | **8,151,845** | **$ 8** | **$ 206,640** | **$ (200,482)** | **$ 6,166** | **$ -** |
| Proceeds from common stock offering and warrant exercises, net of costs | 1,600,000 | - | 1,524 | - | 1,524 | - |
| Common stock issued to settle proxy contest | 600,000 | - | - | - | - | - |
| Net Loss | - | - | - | (4,334) | (4,334) | - |
| **Balance, March 31, 2018** | **10,351,845** | **$ 8** | **$ 208,164** | **$ (204,816)** | **$ 3,356** | **$ -** |
| Conversion of 2018 Notes, net of costs | 5,109,553 | 1 | 3,821 | - | 3,822 | - |
| Procees from warrant exercises related to 2018 Note Offering | 200,000 | - | 373 | - | 373 | - |
| Share-based compensation | - | - | 88 | - | 88 | - |
| Net loss | - | - | | (7,762) | (7,762) | - |
| **Balance, June 30, 2018** | **15,661,398** | **$ 9** | **$ 212,446** | **$ (212,578)** | **$ (123)** | **$ -** |

| (in thousands, except share data) | Class A Common Stock Shares | Class A Common Stock Amount | Additional Paid - in Capital | Accumulated Deficit | Total Shareholders' Equity | Mezzanine Equity |
|---|---|---|---|---|---|---|
| **Balance, January 1, 2019** | **91,859,638** | **$ 17** | **$ 253,331** | **$ (242,566)** | **$ 10,782** | **$ -** |
| Conversion of 2018 Notes | 894,836 | - | 421 | - | 421 | - |
| Proceeds from warrant exercises related to 2018 Note Offering | 210,000 | - | 309 | - | 309 | - |
| Share-based compensation | - | - | 78 | - | 78 | - |
| Adoption of lease accounting standard | - | - | - | 37 | 37 | - |
| Net loss | - | - | - | (4,490) | (4,490) | - |
| **Balance, March 31, 2019** | **92,964,474** | **$ 17** | **$ 254,139** | **$ (247,019)** | **$ 7,137** | **$ -** |
| Common stock offering, net of warrant liability and offering costs | 15,938,280 | 2 | 114 | - | 116 | - |
| Warrant exercises related to 2019 Offering | 5,119,076 | - | 1,598 | - | 1,598 | - |
| Share-based compensation | - | - | 59 | - | 59 | - |
| Adoption of lease accounting standard | - | - | - | (49) | (49) | - |
| Net loss | - | - | - | (5,076) | (5,076) | - |
| Redeemable placement agent common stock warrants | - | - | (195) | - | (195) | 195 |
| **Balance, June 30, 2019** | **114,021,830** | **$ 19** | **$ 255,715** | **$ (252,144)** | **$ 3,590** | **$ 195** |

See accompanying notes.

**REAL GOODS SOLAR, INC.**
**Condensed Consolidated Statements of Cash Flows (unaudited)**

| (in thousands except share data) | For the Six Months Ended June 30, 2019 | 2018 |
|---|---|---|
| **Operating activities:** | | |
| Net loss | $ (9,566) | $ (12,096) |
| Adjustments to reconcile net loss to net cash used in operating activities: | | |
| Depreciation | 146 | 211 |
| Amortization of POWERHOUSE™ License | 100 | - |
| Share based compensation expense | 137 | 88 |
| Goodwill impairment | - | 1,338 |
| Change in fair value of derivative liabilities and loss on debt extinguishment | 1,445 | 3,046 |
| Amortization of debt discount and deferred loan cost | 287 | 1,435 |
| Bad debt expense | 75 | 117 |
| Inventory obsolescence | (180) | (36) |
| Gain on settlement of liability | - | (942) |
| Changes in operating assets and liabilities: | | |
| Accounts receivable | 280 | 701 |
| Costs in excess of billings on uncompleted contracts | (81) | 62 |
| Inventory | (2,863) | 565 |
| Deferred costs on uncompleted contracts | 30 | 10 |
| Net investment in sales-type leases and other current assets | 541 | 3 |
| Other non-current assets | 1,041 | 306 |
| Accounts payable | 1,582 | (181) |
| Accrued liabilities | 351 | 12 |
| Deferred revenue and other current liabilities | 205 | (91) |
| Other liabilities | (1,163) | (386) |
| Net cash used in operating activities | (7,633) | (5,838) |
| **Investing activities:** | | |
| Payments related to POWERHOUSE™ license | (143) | (104) |
| Purchases of property and equipment | (3) | (4) |
| Net cash used in investing activities | (146) | (108) |
| **Financing activities:** | | |
| Proceeds from warrant exercises | 820 | 120 |
| Proceeds from issuance of 2018 Notes | - | 4,545 |
| Proceeds from Investor Notes | 109 | - |
| Repayment of 2016 and 2018 Notes | (256) | - |
| Proceeds from the issuance of common stock with warrants | 3,286 | 1,652 |
| Transaction costs | (315) | - |
| Net cash provided by financing activities | 3,644 | 6,317 |
| Net decrease in cash | (4,135) | 371 |
| Cash at beginning of period | 5,831 | 1,170 |
| Cash at end of period | $ 1,696 | $ 1,541 |
| | | |
| **Non-cash items** | | |
| Debt discount arising from 2018 Note Offering | $ - | $ 10,088 |
| Embedded derivative liability with 2018 Note Offering | - | 7,079 |
| Common stock warrant liability with 2018 Note Offering | - | 6,818 |
| Issuance of Class A common stock for conversion of 2018 Notes | 421 | 3,822 |
| Issuance of Class A common stock for exercise of common stock warrants | 309 | 262 |
| Accrued closing costs on the 2018 Notes | - | 214 |
| Recognition of right-of-use asset upon adoption of ASC 842 | 2,397 | - |
| Recognition of lease liability upon adoption of ASC 842 | 2,360 | - |

See accompanying notes.

**Notes to Condensed Consolidated Financial Statements**

**1. Organization, Nature of Operations, and Principles of Consolidation**

Real Goods Solar, Inc. (the "Company" or "RGS") is in the solar energy systems business as (i) a manufacturer of POWERHOUSE™ 3.0 in-roof solar shingles and (ii) a residential and small business commercial solar energy engineering, procurement, and construction ("EPC") firm.

The consolidated financial statements include the accounts of RGS and its wholly-owned subsidiaries. RGS has prepared the accompanying consolidated financial statements in accordance with accounting principles generally accepted in the United States, or "GAAP", which include the Company's accounts and those of its subsidiaries. Intercompany transactions and balances have been eliminated. The Company has included the results of operations of acquired companies from the effective date of acquisition.

*Principles of Consolidation*

The Company has prepared its unaudited interim condensed consolidated financial statements included herein pursuant to the rules and regulations of the Securities and Exchange Commission ("SEC"). Certain information and note disclosures normally included in annual financial statements prepared in accordance with U.S. GAAP have been condensed or omitted pursuant to these rules and regulations, although the Company believes that the disclosures made are adequate to make the information not misleading. The unaudited interim financial statements contain all adjustments (consisting of only normal recurring adjustments) necessary to present fairly, in all material respects, our condensed consolidated balance sheet as of June 30, 2019, the interim results of operations for the three months and six months ended June 30, 2019 and 2018, changes in equity for the three and six months ended June 30, 2019 and 2018 and cash flows for the six months ended June 30, 2019 and 2018. These interim statements have not been audited. The balance sheet as of December 31, 2018 was derived from the Company's audited consolidated financial statements included in its 2018 10-K. The interim condensed consolidated financial statements contained herein should be read in conjunction with the audited financial statements, including the notes thereto, for the year ended December 31, 2018.

*POWERHOUSE™ License Agreement*

On September 29, 2017 (the "Effective Date"), the Company executed an exclusive domestic and international world-wide Technology License Agreement (the "License") with Dow Global Technologies LLC ("Dow") for its POWERHOUSE™ in-roof solar shingle ("POWERHOUSE™"). The License allows RGS to market the POWERHOUSE™ 3.0 product using the Dow name for a license fee of $3 million. The License requires the Company to commercialize and sell a minimum of 50 megawatts of solar within 5-years of obtaining Underwriter Laboratories ("UL") Certification to retain exclusive world-wide rights.

The Company obtained UL certification for POWERHOUSE™ 3.0 on November 2, 2018, immediately after which the Company commenced commercialization entailing the manufacturing, marketing and sale of POWERHOUSE™ to roofing companies and homebuilders. In addition, the Company sells POWERHOUSE™ to solar EPC companies, manufacturers and distributors.

*Liquidity and Financial Resources Update*

The Company's historical operating results indicate substantial doubt exists related to its ability to continue as a going concern. Management's plans and actions, which are intended to mitigate the substantial doubt raised by the Company's historical operating results in order to satisfy its estimated liquidity needs for a period of 12 months from the issuance of the consolidated financial statements, are discussed below. As the Company cannot predict, with certainty, the outcome of its actions to generate liquidity, or whether such actions would generate the expected liquidity as currently planned, management's plans to mitigate the risk and extend cash resources through the evaluation period, are not considered probable under current accounting standards for assessing an entity's ability to continue as a going concern.

On March 27, 2019, the Company's Board of Directors determined to exit its mainland residential solar business to focus on the POWERHOUSE™ in-roof shingle market and reduce overall cash outflow, with the goal of maximizing future shareholder value. The Company believes this structure and realignment enables it to effectively manage its operations and resources. This realignment resulted in the reduction of workforce payroll plus burden of approximately $4.0 million annually.

As of June 30, 2019, the Company had cash of $1.7 million, working capital of $2.6 million and shareholders' equity of $3.6 million.

The Company has experienced recurring operating losses and negative cash flow from operations which have necessitated:

- Exiting the mainland residential division and execution of a reduction in workforce;
- Focusing on growing POWERHOUSE™ revenue through a re-allocation of personnel to POWERHOUSE™ sales and initiating sales to other solar installers and distribution companies; and
- Raising additional capital. The Company completed a transaction to raise $3.3 million in April 2019.

No assurances can be given that the Company will be successful with its plans to grow revenue for profitable operations.

The Company has historically incurred a cash outflow from its operations as its revenue has not been at a level for profitable operations. As discussed above, a key component of the Company's revenue growth strategy is the sale of the POWERHOUSE™ 3.0 in-roof solar shingle. The Company obtained UL certification for POWERHOUSE™ at the close of 2018 and therefore only recently began to market POWERHOUSE™ at the start of 2019. The Company believes it will require several quarters to generate sales to meet its goals for profitable operations.

**2. Significant Accounting Policies**

The Company made no changes to its significant accounting policies during the three and six months ended June 30, 2019, however it implemented Accounting Standards Codification ("ASC") 842 as discussed in Note 3. Leases.

*Recently Adopted Accounting Standards*

ASU 2018-20, ASU 2018-11, ASU 2018-01 and ASU 2016-02

In February 2016, the FASB established Topic 842, Leases, by issuing Accounting Standards Update (ASU) No. 2016-02, which requires lessees to recognize leases on-balance sheet and disclose key information about leasing arrangements. Topic 842 was subsequently amended by ASU No. 2018-01, Land Easement Practical Expedient for Transition to Topic 842; ASU No. 2018-10, Codification Improvements to Topic 842, Leases; and ASU No. 2018-11, Targeted Improvements. The new standard establishes a right-of-use model (ROU) that requires a lessee to recognize a ROU asset and lease liability on the balance sheet for all leases with a term longer than 12 months. Leases will be classified as finance or operating, with classification affecting the pattern and classification of expense recognition in the income statement. The new standard was effective for the Company on January 1, 2019. A modified retrospective transition approach is required, applying the new standard to all leases existing at the date of initial application. An entity may choose to use either (1) its effective date or (2) the beginning of the earliest comparative period presented in the financial statements as its date of initial application. The accounting standards noted above also requires lessors to classify leases as sales-type, direct financing or operating leases and the Company currently holds leases of solar systems where it is the lessor. Please refer to Note 3. Leases for the impact of the Company's adoption of Topic 842.

ASU 2018-07

On June 20, 2018, the Financial Accounting Standards Board ("FASB") issued Accounting Standards Update No. 2018-07 ("ASU 2018-07"), *Compensation —Stock Compensation (Topic 718) Improvements to Nonemployee Share-Based Payment Accounting*. The amendments in this Update expand the scope of Topic 718 to include share-based payment transactions for acquiring goods and services from nonemployees. An entity should apply the requirements of Topic 718 to nonemployee awards except for specific guidance on inputs to an option pricing model and the attribution of cost (that is, the period of time over which share-based payment awards vest and the pattern of cost recognition over that period). Nonemployee share-based payment awards within the scope of Topic 718 are measured at grant-date fair value of the equity instruments that an entity is obligated to issue when the good has been delivered or the service has been rendered and any other conditions necessary to earn the right to benefit from the instruments have been satisfied. ASU 2018-07 became effective for the Company on January 1, 2019. Nonemployee share-based payments were made during the three months ended June 30, 2019 and the Company has accounted for them in accordance with Topic 718. See Note 4. April 2019 Offering for further detail.

ASU 2017-11

On July 13, 2017, the FASB issued Accounting Standards Update No. 2017-11 ("ASU 2017-11"), *Earnings Per Share (Topic 260); Distinguishing Liabilities from Equity (Topic 480); Derivatives and Hedging (Topic 815): (Part I) Accounting for Certain Financial Instruments with Down Round Features, (Part II) Replacement of the Indefinite Deferral for Mandatorily Redeemable Financial Instruments of Certain Nonpublic Entities and Certain Mandatorily Redeemable Noncontrolling Interests with a Scope Exception*. The amendments in Part I of ASU 2017-11 change the classification analysis of certain equity-linked financial instruments (or embedded features) with down round features. When determining whether certain financial instruments should be classified as liabilities or equity instruments, a down round feature no longer precludes equity classification when assessing whether the instrument is indexed to an entity's own stock. The amendments also clarify existing disclosure requirements for equity-classified instruments. The amendments in Part II of ASU 2017-11 recharacterize the indefinite deferral of certain provisions of Topic 480 to a scope exception. The Company adopted ASU 2017-11 during the three months ended March 31, 2019 however, the amendments within ASU 2017-11 do not have any current accounting impact on the Company.

*Recently Issued Accounting Standards*

ASU 2016-13

On June 16, 2016, the Financial Accounting Standards Board issued Accounting Standards Update No. 2016-13 ("ASU 2016-13"), *Financial Instruments—Credit Losses (Topic 326)*. ASU 2016-13 requires financial assets measured at amortized cost basis to be presented at the net amount expected to be collected. Additionally, any credit losses relating to available-for-sale debt securities will need to be recorded through an allowance for credit losses upon adoption. ASU 2016-13 is effective for the Company for fiscal years beginning after December 15, 2019. The Company expects adoption of ASU 2016-13 to impact various assets on the Condensed Consolidated Balance Sheets, specifically trade receivables and net investments in leases, and is in the process of estimating a lifetime expected credit loss as required by the new standard.

**3. Leases**

In February 2016, the FASB issued a new standard related to leases to increase transparency and comparability among organizations by requiring the recognition of rights-of-use ("ROU") assets and lease liabilities on the balance sheet. Most prominent among the changes in the standard is the recognition of ROU assets and lease liabilities by lessees for those leases classified as operating leases. The Company adopted the new standard on January 1, 2019 and used the effective date as its date of initial application. Consequently, financial information will not be updated, and the disclosures required under the new standard will not be provided for dates and periods before January 1, 2019. The cumulative effect of the change in accounting principal upon adoption of ASC 842 has resulted in an adjustment to retained earnings of $0 million as of January 1, 2019. Additionally, a right-of-use asset in the amount of $2.4 million was recognized in non-current assets with offsetting lease liabilities of $0.3 million and $2.0 million recorded in current and non-current liabilities respectively.

The Company has operating leases for corporate offices, warehouses, fleet vehicles and certain office equipment. Its leases have remaining lease terms of 1 year to 5 years, some of which include options to extend the leases for up to 3 years. Options to extend have been recognized as part of the Company's ROU assets and lease liabilities for our warehouse and corporate office leases in Bloomfield, CT and Kailua, HI. As of the date of adoption of ASC 842, the Company had exercised the extension option for these two locations creating a remaining lease term of 1 year. As for the remaining leases, the Company was not reasonably certain that it would exercise its option to extend the leases and they have not been recognized as part of the Company's right-of-use assets and lease liabilities. Additionally, the Company is the lessor of leased solar systems with 20-year terms which have been classified as sales-type leases. These solar system leases have the option to extend for one or more additional one-year renewal terms.

The Company has elected the "package of practical expedients" and has not reassessed whether the lease contracts contain a lease, their lease classifications or initial direct costs. Additionally, the Company has made an accounting policy election to exclude immaterial leases from lease accounting and will continue to expense them as incurred similar to its capitalization policy. The new standard also provides practical expedients for an entity's ongoing accounting. The Company has elected the short-term lease recognition exemption for all leases that qualify. This means, for those leases that qualify, the Company will not recognize ROU assets or lease liabilities, and this includes not recognizing ROU assets or lease liabilities for existing short-term leases of those assets in transition. The Company has also elected the practical expedient to not separate lease and non-lease components for all of its leases where the Company is the lessee. Significant judgements have been made in the determination of the discount rate for the leases. The rate implicit in the leases was not readily determinable so the Company has used the incremental borrowing rate for measuring the leases liabilities and right-of-use asset. The Company used yields of syndicated loans from comparable companies to estimate an incremental borrowing rate. These loans were collateralized as required by ASC 842 and had similar credit ratings as the Company.

Operating lease costs for the three and six months ended June 30, 2019 were $0.3 million and $0.6 million respectively. Cash paid for amounts included in the measurement of lease liabilities amounted to $0.3 million and $0.6 million for the three months and six months ended June 30, 2019 and have been included within the operating section of the Condensed Consolidated Statements of Cash Flows. Non-cash activities related to the adoption of ASC 842 include additions to right-of-use assets of $2.4 million arising from operating lease liabilities. The weighted average remaining lease term and weighted average discount rate are as follows:

| | June 30, 2019 |
|---|---|
| **Weighted Average Remaining Lease Term** | |
| Operating Leases | 2.41 years |
| **Weighted Average Discount Rate** | |
| Operating Leases | 15% |

Maturities of lease liabilities are as follows:

| | | June 30, 2019 |
|---|---|---|
| **Maturities of lease liabilities** | | |
| 2019 | $ | 784,706 |
| 2020 | | 614,269 |
| 2021 | | 385,908 |
| 2022 | | - |
| 2023 | | - |
| Thereafter | | - |
| Total lease payments | | 1,784,883 |
| Less imputed interest | | (273,985) |
| Total | $ | 1,510,898 |

In determining the amount the Company expects to derive from the leased solar systems following the end of the lease term, it used significant assumptions. At lease inception, the Company engaged the services of a third-party to perform a study of the future fair market value through the end of the assumed lease term of 20 years using a cost approach and income approach. Inflation was projected based on historical trends to determine the residual value in real dollars. The Company has managed the risk associated with the residual value of its leased panels by incorporating system, home and property maintenance requirements within each lease. The Company expects to derive approximately $0.3 million from the underlying solar panels following the end of the lease term.

Maturities of lease receivables are as follows:

| | | June 30, 2019 |
|---|---|---|
| **Maturities of lease receivables** | | |
| 2019 | $ | 41,588 |
| 2020 | | 84,441 |
| 2021 | | 85,912 |
| 2022 | | 87,426 |
| 2023 | | 88,983 |
| Thereafter | | 1,062,602 |
| Total lease receivables | | 1,450,952 |
| Less imputed interest | | (610,939) |
| Present value of lease receivables | | 840,013 |
| Plus Unguaranteed residual | | 251,669 |
| Plus Deferred operations and maintenance expenses | | 59,412 |
| Less Initial direct costs | | (80,574) |
| Total | $ | 1,070,520 |

The components of the Company's aggregate net investment in sales-type leases as of June 30, 2019 include lease receivables of $1.5 million, unguaranteed residual assets of $0.3 million, initial direct cost of ($0.08) million, deferred operations and maintenance expense of $0.06 million and unearned revenue of $0.6 million.

**4. April 2019 Offering**

On April 2, 2019, Company closed an offering and sale of (a) "Primary Units," each consisting of one share of the Company's Class A common stock and a Series R Warrant to purchase one share of Class A common stock (the "Series R Warrant"), and (b) "Alternative Units," each consisting of a Prepaid Series S Warrant to purchase one share of Class A common stock (the "Series S Warrants") and a Series R Warrant to purchase one share of Class A common stock, pursuant to the Securities Purchase Agreement, dated as of April 2, 2019, by and among the Company and three institutional and accredited investors (the "Investors") referred to herein as the "April 2019 Offering". As a result, the Company issued 15,938,280 shares of Class A common stock, Series R Warrants to purchase 17,368,421 shares of Class A common stock, and Series S Warrants to purchase 1,430,141 shares of Class A common stock. The purchase price for a Primary Unit was $0.19 and the purchase price for an Alternative Unit was $0.18.

The Series R Warrant is exercisable at any time after issuance and will remain exercisable for a period of five years thereafter at an exercise price of $.0.20 per share, subject to adjustments for stock splits and similar events. The Series S Warrant is exercisable immediately after issuance and for a period of five years thereafter at an exercise price of $0.19 per share, of which $0.18 was paid at the closing with $0.01 per share payable upon exercise.

The Company received net proceeds of approximately $2.9 million at the closing, after deducting commissions to the placement agents and estimated offering expenses payable by the Company associated with the offering.

In connection with the closing of the offering, the Company paid a cash fee of $231,000 to the placement agent for the offering. The Company also reimbursed $5,000 of the placement agent's expenses and $35,000 of legal expenses of the placement agent. In addition, the Company issued a warrant to purchase 1,389,474 shares of Class A common stock to the placement agent.

The Series R Warrants have been accounted for in accordance with ASC 480. The Series R Warrants are accounted for as liabilities due to provisions allowing the Investors to request redemption in cash, upon a change of control or failure to timely deliver shares of Class A common stock upon exercise. The Company classifies these common stock warrant liabilities on the Condensed Consolidated Balance Sheet as long-term liabilities due to their maturity in 5 years. The Series R Warrants are revalued at each balance sheet date subsequent to their initial issuance. The Company used a Monte Carlo pricing model to value these warrant liabilities. The Monte Carlo pricing model, which is based, in part, upon unobservable inputs for which there is little or no market data, requires the Company to develop its own assumptions. See Note 10. Fair Value Measurements for information about the techniques we use to measure the fair value of our Series R Warrants.

The Series S Warrants are derivatives and have been accounted for in accordance with ASC 815. The derivatives do not meet the criteria for equity classification and have been recorded at their fair value on the Condensed Consolidated Balance Sheets as a long-term liability due to their maturity in 5 years. Any changes in the fair value of the conversion options have been recorded as a gain or loss directly on the Condensed Consolidated Statement of Operations. See Note 10. Fair Value Measurements for information about the techniques we use to measure the fair value of our derivative instruments.

The placement agent warrants have been accounted for as non-employee compensation in accordance with ASC 718 upon adoption of ASU 2018-07 which became effective for the Company on January 1, 2019. The warrants were issued to the placement agents for their assistance with the April 2019 Offering and do not meet the requirements for liability classification. Additionally, the placement agent warrants contain a redemption feature which is not solely within the control of the Company resulting in temporary equity presentation on the Condensed Consolidated Balance Sheet as of June 30, 2019. They have been reflected at their grant date fair value and will be reassessed if it becomes probable that the warrants will be redeemable.

**5. Inventory**

Inventory for our Solar Division consists primarily of solar energy system components (such as solar panels and inverters) and its cost is determined by the first-in, first-out ("FIFO") method. The inventory is stated at the lower of cost or net realizable value with an allowance for slow moving and obsolete inventory items based on an estimate of the markdown to the retail price required to sell or dispose of such items. The Company has an allowance for obsolete or slow-moving inventory of $0.5 million and $0.7 million at June 30, 2019 and December 31, 2018, respectively.

POWERHOUSE™ inventories are recorded at lower of cost (FIFO) or net realizable value. As of June 30, 2019, and December 31, 2018, there was no excess and obsolete inventory reserve for POWERHOUSE™ inventories.

| | June 30, 2019 | December 31, 2018 |
|---|---|---|
| Productive material, work in process and supplies | $ 1,309 | $ 92 |
| Finished product, including service parts, etc. | 3,820 | 2,174 |
| Total inventories | 5,129 | 2,266 |
| Reserve for obsolescence | (491) | (671) |
| Total inventories, net | $ 4,638 | $ 1,595 |

**6. Accrued Liabilities**

Accrued liabilities consist of the following:

| (in thousands) | June 30, 2019 | December 31, 2018 |
|---|---|---|
| Accrued Expenses | $ 711 | $ 924 |
| Received not billed | 870 | 240 |
| Accrued Compensation | 380 | 476 |
| Other | 59 | 69 |
| Accrued Project Costs | 85 | 102 |
| Total | $ 2,105 | $ 1,811 |

**7. Related Parties**

On May 23, 2017, the Company entered into an agreement with Mobomo, LLC ("Mobomo") for the design and development of intellectual property at a cost of $0.5 million. The intellectual property consisted of an integrated mobile phone application and the new RGS 365™ customer portal. As of June 30, 2019, and December 31, 2018, Mobomo provided data hosting services which totaled approximately $5,000 and $20,000, respectively.

Mobomo's Chief Executive Officer is the son of the Company's CEO. The Company approved the agreement in accordance with its related-party transaction policy.

**8. Contingencies**

The Company is subject to risks and uncertainties in the normal course of business, including legal proceedings; governmental regulation, such as the interpretation of tax and labor laws; and the seasonal nature of its business due to weather-related factors. The Company has accrued a liability for probable and estimable costs incurred with respect to identified risks and uncertainties based upon the facts and circumstances currently available.

**9. Shareholders' Equity**

During the three and six months ended June 30, 2018, the Company issued stock options under the 2018 Long-Term Incentive Plan, however, none of these options were exercised during the three and six months ended June 30, 2019. During the three months ended June 30, 2019, 215,500 stock options were granted.

Related specifically to the Company's issuance of convertible notes and warrants on April 9, 2018, the Company issued 894,836 shares of its Class A common stock upon the conversion of the 2018 convertible notes and 210,000 shares of its Class A common stock upon exercise of the Series Q warrants during the six months ended June 30, 2019. No such conversions or exercises took place during the three months ended June 30, 2019.

As discussed in Note 4. April 2019 Offering, the Company issued the Series R Warrants, Series S Warrants and placement agent warrants. Of the warrants issued, 1,430,141 shares of Class A common stock were issued upon exercise of the Series S warrants and 3,688,935 shares of Class A common stock were issued upon exercise of the Series R warrants during the three months ended June 30, 2019.

At June 30, 2019, the Company had the following shares of Class A common stock reserved for future issuance:

| | |
|---|---|
| Stock options and grants outstanding under incentive plans | 1,121,228 |
| Common stock warrants outstanding | 23,573,833 |
| Total shares reserved for future issuance | 24,695,061 |

**10. Fair Value Measurements**

The Company complies with the provisions of FASB ASC No. 820, *Fair Value Measurements and Disclosures* ("ASC 820"), in measuring fair value and in disclosing fair value measurements at the measurement date. ASC 820 defines fair value, establishes a framework for measuring fair value and expands disclosures about fair value measurements required under other accounting pronouncements. FASB ASC No. 820-10-35, Fair Value Measurements and Disclosures- Subsequent Measurement ("ASC 820-10-35"), clarifies that fair value is an exit price, representing the amount that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. ASC 820-10-35-3 also requires that a fair value measurement reflect the assumptions market participants would use in pricing an asset or liability based on the best information available. Assumptions include the risks inherent in a particular valuation technique (such as a pricing model) and/or the risks inherent in the inputs to the model.

ASC 820-10-35 discusses valuation techniques, such as the market approach (comparable market prices), the income approach (present value of future income or cash flow), and the cost approach (cost to replace the service capacity of an asset or replacement cost). The statement utilizes a fair value hierarchy that prioritizes the inputs to valuation techniques used to measure fair value into three broad levels. The following is a brief description of those three levels:

Level 1 Inputs – Level 1 inputs are unadjusted quoted prices in active markets for assets or liabilities identical to those to be reported at fair value. An active market is a market in which transactions occur for the item to be fair valued with sufficient frequency and volume to provide pricing information on an ongoing basis.

Level 2 Inputs – Level 2 inputs are inputs other than quoted prices included within Level 1. Level 2 inputs are observable either directly or indirectly. These inputs include: (a) Quoted prices for similar assets or liabilities in active markets; (b) Quoted prices for identical or similar assets or liabilities in markets that are not active, such as when there are few transactions for the asset or liability, the prices are not current, price quotations vary substantially over time or in which little information is released publicly; (c) Inputs other than quoted prices that are observable for the asset or liability; and (d) Inputs that are derived principally from or corroborated by observable market data by correlation or other means.

Level 3 Inputs – Level 3 inputs are unobservable inputs for an asset or liability. These inputs should be used to determine fair value only when observable inputs are not available. Unobservable inputs should be developed based on the best information available in the circumstances, which might include internally generated data and assumptions being used to price the asset or liability.

When determining the fair value measurements for assets or liabilities required or permitted to be recorded at and/or marked to fair value, the Company considers the principal or most advantageous market in which it would transact and considers assumptions that market participants would use when pricing the asset or liability. When possible, the Company looks to active and observable markets to price identical assets. When identical assets are not traded in active markets, the Company looks to market observable data for similar assets.

The Company accounts for Series R Warrants in accordance with ASC 480. The Series R Warrants are accounted for as liabilities due to provisions in the warrants allowing the Investors to request redemption in cash upon a change of control or failure to timely deliver shares of Class A common stock upon exercise. The Company classifies these warrant liabilities on the Consolidated Balance Sheet as long-term liabilities, which are revalued at each balance sheet date subsequent to their initial issuance. The Company used a Monte Carlo pricing model to initially value the Series R Warrants however, due to the immaterial difference in valuations between the two models, the Company utilized Black Scholes as of June 30, 2019 to value these common stock warrant liabilities which is based, in part, upon unobservable inputs some of which have little or no market data, requiring the Company to develop its own assumptions. The following tables summarize the basis used to measure certain financial assets and liabilities at fair value on a recurring basis in the consolidated balance sheets:

| **Balance at June 30, 2019 (in thousands)** | **Total** | **Quoted Prices in Active Markets for Identical Items (Level 1)** | **Significant Other Observable Inputs (Level 2)** | **Significant Unobservable Inputs (Level 3)** |
|---|---|---|---|---|
| Common stock warrant liability | $ 3,766 | - | - | $ 3,766 |
| | $ 3,766 | - | - | $ 3,766 |

The following table shows the reconciliation from the beginning to the ending balance for the Company's common stock warrant liability measured at fair value on a recurring basis using significant unobservable inputs (i.e. Level 3) for the period ended June 30, 2019:

| **(in thousands)** | **Series Q common stock warrant liability** | **Series R common stock warrant liability** | **Series S common stock warrant liability** | **Total** |
|---|---|---|---|---|
| Fair value of financial liabilities at December 31, 2018 | $ 511 | $ - | $ - | $ 511 |
| April 2019 Offering | - | 2,605 | 250 | 2,855 |
| Change in the fair value of common stock warrant liabilities, net | (30) | 1,518 | - | 1,488 |
| Adjustment for exercise of common stock warrant liabilities | (241) | (597) | (250) | (1,088) |
| Fair value of financial liabilities at June 30, 2019 | $ 240 | $ 3,526 | $ - | $ 3,766 |

The assumptions used in the Black Scholes model were as follows:

| | Exercise Price | Strike Floor | Closing Market Price (average) | Risk-free Rate | Dividend Yield | Market Price Volatility | Remaining Term (years) |
|---|---|---|---|---|---|---|---|
| Series Q Common Stock Warrant Liability June 30, 2019 | $ 0.19 | N/a | $ 0.28 | 1.76% | 0.00% | 151% | 3.78 |
| Series R Common Stock Warrant Liability June 30, 2019 | $ 0.20 | N/a | $ 0.28 | 1.76% | 0.00% | 151% | 4.76 |

*Other Financial Instruments*

The Company's financial instruments consist primarily of cash and cash equivalents, accounts receivable, accounts payable, deferred revenue and convertible debt. The carrying values of these financial instruments approximate their fair values, due to their short-term nature.

**11. Segment Information**

Financial information for the Company’s segments and a reconciliation of the total of the reportable segments’ income (loss) from operations (measures of profit or loss) to the Company’s consolidated net loss are as follows:

| | Three Months ended June 30, | | Six Months ended June 30, | |
|---|---|---|---|---|
| **(in thousands)** | **2019** | **2018** | **2019** | **2018** |
| Contract revenue: | | | | |
| Solar Division | $ 2,188 | $ 3,568 | $ 4,248 | $ 6,381 |
| POWERHOUSE™ | 106 | - | 171 | - |
| Other | - | - | 37 | 11 |
| Consolidated contract revenue | 2,294 | 3,568 | 4,456 | 6,392 |
| Operating loss: | | | | |
| Solar Division | (532) | (571) | (2,150) | (1,996) |
| POWERHOUSE™ | (1,004) | (57) | (1,465) | (108) |
| Other | (1,816) | (3,581) | (4,239) | (6,496) |
| Operating loss | (3,352) | (4,209) | (7,854) | (8,600) |
| Reconciliation of consolidated loss from operations to consolidated net loss: | | | | |
| Change in fair value of derivative liabilities and loss on debt extinguishment | (1,502) | (3,073) | (1,445) | (3,046) |
| Amortization of debt discount and deferred loan costs | (234) | (1,435) | (287) | (1,435) |
| Other income | 12 | 955 | 20 | 985 |
| Net loss | $ (5,076) | $ (7,762) | $ (9,566) | $ (12,096) |

The following is a reconciliation of reportable segments’ assets to the Company’s consolidated total assets. The Other segment includes certain unallocated corporate amounts.

| **(in thousands)** | **June 30, 2019** | **December 31, 2018** |
|---|---|---|
| Total assets: | | |
| Solar Division | $ 6,224 | $ 7,136 |
| POWERHOUSE™ | 7,592 | 4,298 |
| Other | 1,669 | 4,826 |
| | $ 15,485 | $ 16,260 |

**Item 2. Management's Discussion and Analysis of Financial Condition and Results of Operations**

*The following discussion and analysis provides information that we believe is relevant to an assessment and understanding of our results of operations and financial condition. You should read this analysis in conjunction with our interim condensed consolidated financial statements and related footnotes. This discussion and analysis contains statements of a forward-looking nature relating to future events or our future financial performance. These statements involve known and unknown risks, uncertainties and other factors that may cause actual results, level of activity, performance or achievements to be materially different from any future results, levels of activity, performance or achievements expressed or implied by these forward-looking statements, including those set forth in our 2018 10-K, our Quarterly Report on Form 10-Q for the period ended March 31, 2019 and this report.*

**Overview**

For the last 40 years, we have been a residential and small business commercial solar EPC company. We offer turnkey services, including design, procurement, permitting, build-out, grid connection, financing referrals and warranty and customer satisfaction activities. Our solar energy systems use high- quality solar photovoltaic modules. We use proven technologies and techniques to help customers achieve meaningful savings by reducing their utility costs. In addition, we help customers lower their reliance upon fossil fuel energy sources.

As of September 29, 2017, we are the exclusive domestic and international licensee of the POWERHOUSE™ in-roof solar shingle, an innovative and aesthetically pleasing solar shingle system developed by Dow. During 2018, we received UL certification for POWERHOUSE™ 3.0 and manufactured our initial solar shingles during December 2018. We anticipate that in the future, the majority of our revenue will arise from sales of POWERHOUSE™ in-roof solar shingles to local roofing companies, solar installers and homebuilders.

We, including our predecessors, have more than 40 years of experience in residential solar energy and trace our roots to 1978, when Real Goods Trading Corporation sold the first solar photovoltaic panels in the United States. We have designed and installed over 26,000 residential and commercial solar energy systems since our founding.

We operate as three reportable segments: (1) Solar Division – the installation of solar energy systems for homeowners, including lease financing thereof, and small business commercial in the United States; (2) POWERHOUSE™ - the manufacturing and sales of solar shingles; and (3) Other – corporate operations. On March 27, 2019, our Board of Directors decided to exit our mainland residential solar business to focus on the POWERHOUSE™ in-roof shingle market and reduce overall cash outflow, with the goal of maximizing future shareholder value. We believe this structure and realignment enables us to effectively manage our operations and resources.

As an EPC company, we generally recognize revenue from solar energy systems sold to our customers when we install the solar energy system. Our business requires that we incur costs of acquiring solar panels and labor to install solar energy systems on our customer rooftops up-front and receive cash from customers thereafter. As a result, during periods when we are increasing sales, we expect to have negative cash flow from operations.

As manufacturer of POWERHOUSE™, we will recognize revenue upon transfer of control to the customer. During 2018, we established a supply chain to manufacture POWERHOUSE™. We also began building a nationwide network of local roofers and solar installers. We received our first purchase order from a customer on December 27, 2018 and shipped to the customer in January 2019.

*POWERHOUSE™ License*

On September 29, 2017, we executed the License with Dow, providing us an exclusive domestic and international right to commercialize the POWERHOUSE™ in-roof solar shingle, an innovative and aesthetically pleasing solar shingle system developed by Dow. The POWERHOUSE™ 1.0 and 2.0 versions used CIGS (copper indium gallium selenide solar cells) technology which had a high manufacturing cost, resulting in the product not being consumer price friendly. Conversely, the POWERHOUSE™ 3.0 version was developed with traditional silicon solar cells to increase solar production and to provide a competitive consumer price point.

In addition to the License, we executed a Trademark License Agreement (the "TLA"), a Technology Service Agreement and a Sales Agreement- Surplus Property with Dow. The execution of the TLA allows us to market the POWERHOUSE™ 3.0 product using the Dow name.

Under the terms of the License, we will produce, market and sell POWERHOUSE™ 3.0, for which we paid a license fee of $3 million and thereafter a royalty fee equal to 2.5% against net sales of the POWERHOUSE™ product and services, payable quarterly in arrears. Further, we were responsible for all costs to obtain UL certification and for the prosecution of all related patents world-wide, which may be offset against the payment of the royalty fee. During December 2018, we began commercialization of POWERHOUSE™ 3.0 entailing the manufacturing, marketing and sale of POWERHOUSE™ 3.0 to roofing companies and homebuilders.

As of June 30, 2019, we have invested approximately $3.2 million that has been capitalized to the POWERHOUSE™ License, an intangible asset on the Consolidated Balance Sheet.

***Key Metrics***

*Key operational metric, gross margin on residential segment, currently our largest segment*

We utilize a job costing system whereby employees record their time to projects. We accumulate the cost of idle time reflecting the cost we incur to maintain a construction organization until our revenue grows, allowing for greater utilization of our construction organization. Cost of goods sold ("COGS") include direct project installation costs (materials, labor, travel, financing fees, and estimated warranty costs) and indirect costs for project installation support (including un-utilized labor of idle time of construction crews, supplies, and insurance). We employ an internal time reporting system to determine COGS and resulting gross margin percentage used by us to measure our performance in achieving gross margin percentage targets. Further, we measure COGS per watt based upon COGS, excluding idle time, divided by the aggregate watts of systems installed during the period. For financial reporting purposes, COGS include the idle time of construction crews and indirect costs. Gross margin percentage on actual installation time is not a measure defined by generally accepted accounting principles.

For the three months ended June 30, 2018, the Company employed its own installation crews as compared to the Company utilizing authorized integrators during the three months ended June 30, 2019, a decision made by management as it relates to the installation of backlog on a go forward basis after the reduction of headcount at the end of March 2019. While the utilization of authorized integrators is more costly than our own installation crews, it is offset by reducing staff idle time. The decrease in gross margin shown below is due to the impact of indirect fixed costs spread across lesser installation revenue.

| | Three Months Ended | | Six Months Ended | |
|---|---|---|---|---|
| | June 30, 2019 | June 30, 2018 | June 30, 2019 | June 30, 2018 |
| Gross margin % on actual installation time | 17% | 24% | 16% | 24% |
| Gross margin % including idle time | 11% | 15% | -5% | 9% |

*Backlog*

Represents the dollar amount of revenue that may be recognized in the future from signed contracts without taking into account possible future cancellations. Backlog is not a measure defined by generally accepted accounting principles and is not a measure of contract profitability. The backlog amounts disclosed are net of cancellations received and include anticipated revenues associated with (i) the original contract amounts, and (ii) change orders for which written confirmations have been received. Backlog may not be indicative of future operating results.

The following table summarizes changes to our backlog for the Solar Division and POWERHOUSE™ during the six-month period ended June 30, 2019:

| (in thousands) | Solar Division | POWERHOUSE™ |
|---|---|---|
| Backlog at January 1, 2019 | $ 15,657 | $ - |
| Bookings from new awards ("Sales") | 8,121 | 66 |
| Cancellations and reductions on existing contracts | (4,503) | - |
| Amounts recognized in revenue upon installation | (1,386) | (65) |
| Backlog at March 31, 2019 | $ 17,889 | $ 1 |
| Bookings from new awards ("Sales") | 3,609 | 7,802 |
| Cancellations and reductions on existing contracts | (4,408) | - |
| Amounts recognized in revenue upon installation | (1,779) | (105) |
| Backlog at June 30, 2019 | $ 15,311 | $ 7,698 |

**Critical Accounting Policies and Estimates**

There were no material changes to our critical accounting policies or estimates during the six months ended June 30, 2019 from those disclosed in our 2018 10-K. The adoption of ASC 842 related to leases has not had a material impact on our results of operation, financial condition or cash flows.

**Results of Operations**

***Three Months Ended June 30, 2019 Compared to Three Months Ended June 30, 2018***

<u>*Contract revenue:*</u>

*Sale and installation of solar energy systems.* Sale and installation of solar energy system revenue decreased by $1.5 million, or 45%, to $1.9 million during the three months ended June 30, 2019, from $3.4 million during the three months ended June 30, 2018. The decrease in revenue reflects management's decision to exit the mainland residential solar business and install only its existing backlog.

<u>*Contract expenses:*</u>

*Installation of solar energy systems.* Installation of solar energy system expenses decreased $1.2 million, or 40%, to $1.8 million during the three months ended June 30, 2019, from $3.0 million during the three months ended June 30, 2018. The reduction of contract expenses reflects the lower revenue for the three months ended June 30, 2019 as compared to the same period in 2018.

Customer acquisition: Customer acquisition expense decreased $0.3 million during the three months ended June 30, 2019, or 38%, to $0.5 million from $0.8 million during the three months ended June 30, 2018. The decrease in customer acquisition resulted from management's decision to exit the mainland residential solar business.

Operating Expenses: Operating expenses for the three months ended June 30, 2019 was $2.6 million compared to $2.3 million during the three months ended June 30, 2018, an increase of $0.3 million, or 13%, primarily due to expansion of POWERHOUSE™ operations over the previous 12-month period.

Goodwill Impairment: As of June 30, 2018, we concluded that the fair value of goodwill no longer exceeded its carrying value and wrote off the goodwill balance.

Change in fair value of derivative liabilities, loss on debt extinguishment and amortization of debt discount & deferred loan costs: During the three months ended June 30, 2018, the issuance of the 2018 convertible notes, subsequent conversions and revaluation of the derivative liabilities resulted in a net loss of $3.1 million. Additionally, interest expense increased $1.4 million due to the accretion of the debt discount and deferred loan costs related to the 2018 convertible notes. During the three months ended June 30, 2019 we recorded a net loss of $1.5 million related to the change in fair value of derivative liabilities associated with warrants issued with the April 2019 Offering.

*Other (income) expense:* During the quarter ended June 30, 2018, the Company recorded a gain from settlement of a long-term insurance liability.

***Six Months Ended June 30, 2019 Compared to Six Months Ended June 30, 2018***

Contract revenue:

*Sale and installation of solar energy systems.* Sale and installation of solar energy system revenue decreased $2.5 million, or 42%, to $3.4 million during the six months ended June 30, 2019, from $5.9 million during the six months ended June 30, 2018. The decrease in revenue resulted from management's decision to exit the mainland residential solar business and install only its existing backlog.

Contract expenses:

*Installation of solar energy systems.* Installation of solar energy system expenses decreased $2.1 million, or 36%, to $3.7 million during the three months ended June 30, 2019, from $5.8 million during the three months ended June 30, 2018, which corresponds to the reduction of installation revenue during this same time comparison.

Customer acquisition: Customer acquisition expense decreased $0.4 million during the six months ended June 30, 2019, or 20%, to $1.6 million from $2.0 million during the six months ended June 30, 2018. The decrease in customer acquisition resulted from management's decision to exit the mainland residential solar business.

Operating expense: Operating expenses increased $0.8 million, or 16%, to $5.7 million during the six months ended June 30, 2019 compared to $4.9 million during the six months ended June 30, 2018, primarily due to expansion of POWERHOUSE™ operations over the previous 12-month period.

Change in fair value of derivative liabilities, loss on debt extinguishment and amortization of debt discount & deferred loan costs: During the six months ended June 30, 2018, the issuance of the 2018 convertible notes, subsequent conversions and revaluation of the derivative liabilities resulted in a net loss of $3.1 million. Additionally, interest expense increased $1.4 million due to the accretion of the debt discount and deferred loan costs related to the 2018 convertible notes. During the three months ended June 30, 2019 we recorded a net loss of $1.4 million related to the change in fair value of derivative liabilities associated with warrants issued with the April 2019 Offering.

Other (income) expenses: During the quarter ended June 30, 2018, the Company recorded a gain from settlement of a long-term insurance liability.

**Seasonality**

Our quarterly net revenue and operating results for solar energy system installations are difficult to predict and have, in the past, and may, in the future, fluctuate from quarter to quarter as a result of changes in state, federal, or private utility company subsidies, as well as weather, economic trends and other factors. We have historically experienced seasonality in our solar installation business, with the first quarter representing our lowest installation quarter of the year primarily due to adverse weather. Further, we have historically experienced seasonality in our sales of solar systems, with the fourth and first quarters of the year seeing less sales orders than the second and third quarters.

As we have just begun to market POWERHOUSE™ in-roof shingles, we do not have historical experience to assess seasonality for this line of business.

**Liquidity and Financial Resources Update**

Our historical operating results indicate substantial doubt exists related to our ability to continue as a going concern. Management's plans and actions, which are intended to mitigate the substantial doubt raised by our historical operating results in order to satisfy our estimated liquidity needs for a period of 12 months from the issuance of the consolidated financial statements, are discussed below. As we cannot predict, with certainty, the outcome of our actions to generate liquidity, or whether such actions would generate the expected liquidity as currently planned, management's plans to mitigate the risk and extend cash resources through the evaluation period, are not considered probable under current accounting standards for assessing an entity's ability to continue as a going concern.

On March 27, 2019, the Company's Board of Directors decided to exit its mainland residential solar business to focus on the POWERHOUSE™ in-roof shingle market and reduce overall cash outflow, with the goal of maximizing future shareholder value. The Company believes this structure and realignment enables it to effectively manage its operations and resources. This realignment resulted in the reduction of workforce payroll plus burden of approximately $4.0 million annually.

As of June 30, 2019, we had cash of $1.7 million, working capital of $2.6 million and shareholders' equity of $3.6 million.

We have experienced recurring operating losses and negative cash flow from operations which have necessitated:

- Exiting the mainland residential division and execution of a reduction in workforce;

- Focusing on growing POWERHOUSE™ revenue through a re-allocation of personnel to POWERHOUSE™ sales and initiating sales to other solar installers and distribution companies; and

- Raising additional capital. We completed a transaction to raise $3.3 million in April 2019.

No assurances can be given that we will be successful with our plans to grow revenue for profitable operations.

We have historically incurred a cash outflow from our operations as our revenue has not been at a level for profitable operations. As discussed above, a key component of our revenue growth strategy is the sale of our POWERHOUSE™ 3.0 in-roof solar shingle. We obtained UL certification for POWERHOUSE™ at the close of 2018 and therefore only recently began to market POWERHOUSE™ at the start of 2019. We believe we will require several quarters to generate sales to meet our goals for profitable operations.

As discussed above, (i) we expect that future sales of POWERHOUSE™ 3.0 in-roof solar shingles will be our primary source of revenue and (ii) we only recently began marketing POWERHOUSE™ 3.0, and accordingly, we expect to incur a quarterly cash outflow for a portion of 2019. We have placed purchase orders with our supply chain partners for inventory to be converted to revenue.

The Company has prepared its business plan for the ensuing twelve months, which includes the following:

- Exit from the mainland residential division which historically has generated material cash outflows;

- Generate POWERHOUSE™ revenue through sales to local roofing companies, home builders and EPC companies;

- Convert current mainland residential backlog into revenue through authorized third-party integrators; and

- Increase sales and installations with commercial customers on the mainland and sales and installations of residential and commercial systems in Hawaii.

We may have access to cash from exercises of outstanding Class A common stock. The maximum cash from exercises of outstanding Class A common stock warrants is the mathematical result of the number of warrant shares times the respective exercise price per share. The majority of these Class A common stock warrants have exercise prices at or below $3.10 per share and would result in cash receipts of $21.4 million if all investors elect cash exercises (not cashless exercises). No assurances can be given that the investors will exercise their remaining Class A common stock warrants.

**Cash Flows**

The following table summarizes our primary sources (uses) of cash during the periods presented:

| | For the Six Months Ended June 30 | |
|---|---|---|
| | 2019 | 2018 |
| Net cash (used in) provided by: | | |
| Operating activities | $ (7,633) | $ (5,838) |
| Investing activities | (146) | (108) |
| Financing activities | 3,644 | 6,317 |
| Net increase (decrease) in cash | $ (4,135) | $ 371 |

*Operating activities*. Our operating activities used net cash of $7.6 million and $5.8 million during the six months ended June 30, 2019 and 2018, respectively. Our increase in cash used in operations of $1.8 million was primarily attributable to an increase in manufactured POWERHOUSE™ inventory of $1.5 million.

*Investing activities*. Cash used in investing activities during the six months ended June 30, 2019 and 2018, were immaterial.

*Financing activities.* We raised net cash of approximately $3.0 million from the issuance of securities related to the April 2019 Offering during the six months ended June 30, 2019, as compared $6.3 million during the six months ended June 30, 2018 from (i) $4.5 million from the issuance of the 2018 convertible notes, (ii) $1.7 million from the issuance of securities on January 4, 2018, and (iii) $0.1 million from the issuance of Class A commons stock upon exercise of warrants.

**Off-Balance Sheet Arrangements**

We do not participate in transactions that generate relationships with unconsolidated entities or financial partnerships, such as special purpose entities or variable interest entities, established for the purpose of facilitating off-balance sheet arrangements or other limited purposes and as a result we do not have and are not reasonably likely to have future off-balance sheet arrangements.

**Risk Factors**

We caution that there are risks and uncertainties that could cause our actual results to be materially different from those indicated by forward-looking statements that, from time-to-time, we make in filings with the SEC, news releases, reports, proxy statements, registration statements and other written communications as well as oral forward-looking statements made by our representatives. These risks and uncertainties include, but are not limited to, those risks set forth listed in the section entitled "RISK FACTORS" in our 2018 10-K, which is on file with the SEC. Except for the historical information contained herein, the matters discussed in this analysis are forward-looking statements that involve risk and uncertainties, including, but not limited to, general economic and business conditions, competition, pricing, brand reputation, consumer trends, and other factors which are often beyond our control.

The risks and uncertainties we have described are not the only ones facing our Company. Additional risks and uncertainties not presently known to us or that we currently deem immaterial may also affect our business operations. We do not undertake any obligation to update forward-looking statements except as required by law.

**Item 3. Quantitative and Qualitative Disclosures About Market Risk**

Not applicable.

**Item 4. Controls and Procedures**

**Evaluation of Disclosure Controls and Procedures**

Our chief executive officer and chief financial officer conducted an evaluation of the effectiveness of the design and operation of our disclosure controls and procedures, as defined in Rules 13a-15(e) and Rule 15d-15(e) under the Securities Exchange Act of 1934, as amended. Based upon their evaluation as of June 30, 2019, they have concluded that those disclosure controls and procedures are effective.

**Changes in Internal Control over Financial Reporting**

There were no changes in the Company's internal control over financial reporting (as defined in Exchange Act Rule 13a-15(f)) that occurred during the quarter ended June 30, 2019 that have materially affected, or are reasonably likely to materially affect, the Company's internal control over financial reporting.

**PART II – OTHER INFORMATION**

**Item 1. Legal Proceedings**

From time to time, the Company may be involved in legal proceedings that are considered to be in the normal course of business. There were no material developments to previously reported legal proceedings during the three months ended June 30, 2019.

**Item 1A. Risk Factors**

*We do not have a sufficient number of authorized shares of Class A common stock for a future capital raise of Class A common stock or securities convertible into or exercisable for Class A common stock.*

In the past, we have raised capital by issuing shares of Class A common stock or securities convertible into or exercisable for Class A common stock, or a combination thereof. We may need to raise additional capital in the future. As of August 8, 2019, we have approximately 12 million available shares of Class A common stock (after taking into account shares of Class A common stock reserved for issuance, for example, under outstanding warrants). At our June 2019 annual shareholders' meeting, we requested that our shareholders approve an amendment to our articles of incorporation to increase the authorized number of shares of Class A common stock from 150,000,000 to 250,000,000. Our shareholders did not approve the amendment and, accordingly, we do not believe we have a sufficient number of shares of Class A common stock authorized to raise a meaningful amount of capital through an offering of Class A common stock or securities convertible into or exercisable for Class A common stock in the future. We only recently began the nationwide commercialization of POWERHOUSE™ 3.0, and, accordingly, we expect to incur a quarterly cash outflow for a portion of 2019. In the event that we have insufficient capital to cover our operating expenses, including the commercialization of POWERHOUSE™ 3.0, we would evaluate further cost-reduction measures, sale of assets, seeking capital from issuance of our other authorized classes of securities, and seeking capital from Class A common stock warrant exercises by reducing the exercise price of Class A common stock warrants to induce conversion. No assurances can be given that we will be successful in doing so.

**Item 6. Exhibits.**

| Exhibit No. | Description |
|---|---|
| 4.1 | Form of Series R Warrant, dated April 2, 2019, issued to investors party to the Securities Purchase Agreement, dated April 2, 2019 (Incorporated by reference to Exhibit 4.1 to Real Goods Solar, Inc.'s Periodic Report on Form 8-K filed April 2, 2019 (Commission File No. 001-34044)). |
| 4.2 | Form of Series S Warrant, dated April 2, 2019, issued to investors party to the Securities Purchase Agreement, dated April 2, 2019 (Incorporated by reference to Exhibit 4.2 to Real Goods Solar, Inc.'s Periodic Report on Form 8-K filed April 2, 2019 (Commission File No. 001-34044)). |
| 4.3 | Form of Placement Agent Warrant, dated as of April 2, 2019, issued to Dawson James Securities, Inc. (Incorporated by reference to Exhibit 4.1 to Real Goods Solar, Inc.'s Periodic Report on Form 8-K filed April 4, 2019 (Commission File No. 001-34044)). |
| 10.1 | Engagement Letter, dated March 19, 2019, among Real Goods Solar, Inc. and Dawson James Securities, Inc. (Incorporated by reference to Exhibit 1.1 to Real Goods Solar, Inc.'s Periodic Report on Form 8-K filed April 2, 2019 (Commission File No. 001-34044)). |
| 10.2 | Form of Securities Purchase Agreement, dated April 2, 2019, among Real Goods Solar, Inc. and the purchasers party thereto (Incorporated by reference to Exhibit 10.1 to Real Goods Solar, Inc.'s Periodic Report on Form 8-K filed April 2, 2019 (Commission File No. 001-34044)). |
| 10.3 | Form of Leak-Out Agreement, dated April 2, 2019, among Real Goods Solar, Inc. and certain purchasers party to the Securities Purchase Agreement, dated April 2, 2019 (Incorporated by reference to Exhibit 10.2 to Real Goods Solar, Inc.'s Current Report on Form 8-K filed April 2, 2019 (Commission File No. 001-34044)). |
| 31.1* | Certification of the Chief Executive Officer pursuant to Rule 13a-14(a) under the Securities Exchange Act of 1934 |
| 31.2* | Certification of the Chief Financial Officer pursuant to Rule 13a-14(a) under the Securities Exchange Act of 1934 |
| 32.1** | Certification of the Chief Executive Officer pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002 |
| 32.2** | Certification of the Chief Financial Officer pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002 |
| 101.INS** | XBRL Instance Document |
| 101.SCH** | XBRL Taxonomy Extension Schema |
| 101.CAL** | XBRL Taxonomy Extension Calculation Linkbase |
| 101.DEF** | XBRL Taxonomy Extension Definition Linkbase |
| 101.LAB** | XBRL Taxonomy Extension Label Linkbase |
| 101.PRE** | XBRL Taxonomy Extension Presentation Linkbase |

* Filed herewith
** Furnished herewith

**SIGNATURES**

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf, by the undersigned, thereunto duly authorized.

| | |
|---|---|
| | Real Goods Solar, Inc.<br>(Registrant) |
| Date: August 13, 2019 | By: /s/ Dennis Lacey<br>Dennis Lacey<br>Chief Executive Officer and Director<br>(Authorized Officer) |
| Date: August 13, 2019 | By: /s/ Alan Fine<br>Alan Fine<br>Chief Financial Officer and Treasurer<br>(Principal Financial Officer) |

**Exhibit 31.1**

**CERTIFICATION**

I, Dennis Lacey, certify that:

1. I have reviewed this quarterly report on Form 10-Q of Real Goods Solar, Inc.;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

   (a) designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

   (b) designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

   (c) evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

   (d) disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

   (a) all significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

   (b) any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: August 13, 2019

/s/ Dennis Lacey

Dennis Lacey
Chief Executive Officer and Director
(Principal Executive Officer)

**Exhibit 31.2**

**CERTIFICATION**

I, Alan Fine, certify that:

1. I have reviewed this quarterly report on Form 10-Q of Real Goods Solar, Inc.;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

   (a) designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

   (b) designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

   (c) evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

   (d) disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

   (a) all significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

   (b) any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: August 13, 2019

/s/ Alan Fine
Alan Fine
Chief Financial Officer and Treasurer
(Principal Financial Officer)

**Exhibit 32.1**

**CERTIFICATIONS PURSUANT TO 18 U.S.C. SECTION 1350**
**AS ADOPTED PURSUANT TO SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002**

In connection with the Quarterly Report of Real Goods Solar, Inc. (the "Company") on Form 10-Q for the period ended June 30, 2019, as filed with the U.S. Securities and Exchange Commission on the date hereof (the "Report"), I, Dennis Lacey, Chief Executive Officer of the Company, certify, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that to the best of my knowledge:

(1) The Report fully complies with the requirements of Sections 13(a) or 15(d) of the Securities Exchange Act of 1934; and

(2) The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Date: August 13, 2019

/s/ Dennis Lacey
Dennis Lacey
Chief Executive Officer and Director
(Principal Executive Officer)

A signed original of this written statement required by Section 906 has been provided to the Company and will be retained by the Company and furnished to the U.S. Securities and Exchange Commission or its staff upon request.

**Exhibit 32.2**

**CERTIFICATIONS PURSUANT TO 18 U.S.C. SECTION 1350**
**AS ADOPTED PURSUANT TO SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002**

In connection with the Quarterly Report of Real Goods Solar, Inc. (the “Company”) on Form 10-Q for the period ended June 30, 2019, as filed with the U.S. Securities and Exchange Commission on the date hereof (the “Report”), I, Alan Fine, Chief Financial Officer and Treasurer of the Company, certify, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that to my knowledge:

(1) The Report fully complies with the requirements of Sections 13(a) or 15(d) of the Securities Exchange Act of 1934; and

(2) The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Date: August 13, 2019

/s/ Alan Fine
Alan Fine
Chief Financial Officer and Treasurer
(Principal Financial Officer)

A signed original of this written statement required by Section 906 has been provided to the Company and will be retained by the Company and furnished to the U.S. Securities and Exchange Commission or its staff upon request.