

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 September 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
(State or other jurisdiction of
incorporation or organization)

26-1851813
(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 November 12, 2019, 120,612,570 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; whether we will launch our recently announced rights offering and receive any proceeds therefrom; 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, June 30, 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)	September 30, 2019	December 31, 2018
ASSETS		
Current assets:		
Cash	\$ 799	\$ 5,831
Accounts receivable, net	755	1,340
Contract assets	81	11
Inventory, net	4,639	1,595
Deferred costs on uncompleted contracts	102	236
Other current assets	994	1,613
Total current assets	7,370	10,626
Property and equipment, net	635	778
POWERHOUSE™ license, net	3,178	3,202
Operating lease right-of-use asset	1,264	-
Net investment in sales-type leases and other assets	1,456	1,654
Total assets	\$ 13,903	\$ 16,260
LIABILITIES AND SHAREHOLDERS' EQUITY		
Current liabilities:		
Convertible debt, net	\$ -	\$ 336
Accounts payable	3,347	862
Accrued liabilities	2,078	1,811
Operating lease liability	529	-
Deferred revenue and other current liabilities	1,006	716
Total current liabilities	6,960	3,725
Other liabilities	834	1,242
Operating lease liability	787	-
Common stock warrant liabilities	588	511
Total liabilities	9,169	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; 119,029,994 and 91,859,638 shares issued and outstanding at September 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	258,466	253,331
Accumulated deficit	(253,946)	(242,566)
Total shareholders' equity	4,539	10,782
Total liabilities, mezzanine equity and shareholders' equity	\$ 13,903	\$ 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 September 30,		For the Nine Months Ended September 30,	
	2019	2018	2019	2018
Contract revenue:				
Sale and installation of solar energy systems	\$ 1,684	\$ 3,620	\$ 5,127	\$ 9,499
POWERHOUSE™ Sales	197	-	367	-
Service	332	280	1,154	763
Leasing, net	12	15	33	44
Contract expenses:				
Installation of solar energy systems	1,772	3,092	5,459	8,892
POWERHOUSE™ manufacturing	146	146	583	151
Service	338	332	1,056	1,065
Customer acquisition	305	841	1,918	2,822
Contract loss	(336)	(496)	(2,335)	(2,624)
Operating expense	2,275	2,561	7,931	7,533
Goodwill Impairment	-	-	-	1,338
Litigation	-	20	199	181
Operating loss	(2,611)	(3,077)	(10,465)	(11,676)
Change in fair value of derivative liabilities and gain (loss) on debt extinguishment	588	(14,366)	(857)	(17,413)
Amortization of debt discount and deferred loan costs	-	(866)	(287)	(2,301)
Other income	212	13	232	998
Net loss	\$ (1,811)	\$ (18,296)	\$ (11,377)	\$ (30,392)
Net loss per share – basic and diluted:				
Basic and Diluted	\$ (0.02)	\$ (0.49)	\$ (0.11)	\$ (1.43)
Weighted-average shares outstanding:				
Basic and Diluted	116,276	36,959	106,292	21,196

See accompanying notes.

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

(in thousands, except share data)	Class A Common Stock		Additional Paid - in Capital	Accumulated Deficit	Total Shareholders' Equity (Deficit)	Mezzanine Equity
	Shares	Amount				
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	-
Proceeds 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)	\$ -
Conversion of 2018 Notes, net of costs	34,338,700	3	13,239	-	13,242	-
Proceeds from warrant exercises related to 2018 Note Offering	7,191,668	1	11,718	-	11,719	-
Share-based compensation	-	-	90	-	90	-
Net loss	-	-	-	(18,296)	(18,296)	-
Balance, September 30, 2018	57,191,766	\$ 13	\$ 237,493	\$ (230,874)	\$ 6,632	\$ -

(in thousands, except share data)	Class A Common Stock		Additional Paid - in Capital	Accumulated Deficit	Total Shareholders' Equity	Mezzanine Equity
	Shares	Amount				
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
Common stock offering, net of warrant liability and offering costs	-	-	(20)	-	(20)	-
Warrant exercises related to 2019 Offering	5,008,164	-	2,713	-	2,713	-
Share-based compensation	-	-	58	-	58	-
Adoption of lease accounting standard	-	-	-	9	9	-
Net loss	-	-	-	(1,811)	(1,811)	-
Balance, September 30, 2019	119,029,994	\$ 19	\$ 258,466	\$ (253,946)	\$ 4,539	\$ 195

See accompanying notes.

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

(in thousands except share data)	For the Nine Months Ended September 30,	
	2019	2018
Operating activities:		
Net loss	\$ (11,377)	\$ (30,392)
Adjustments to reconcile net loss to net cash used in operating activities:		
Depreciation	222	313
Amortization of POWERHOUSE™ License	156	-
Share based compensation expense	195	178
Goodwill impairment	-	1,338
Change in fair value of derivative liabilities and loss on debt extinguishment	857	17,413
Amortization of debt discount and deferred loan cost	283	2,301
Bad debt expense	95	(18)
Inventory obsolescence	(13)	-
Gain on settlement of liability	(163)	(942)
Loss on sale of fixed assets	6	-
Changes in operating assets and liabilities:		
Accounts receivable	490	1,054
Contract assets	(70)	50
Inventory	(3,031)	738
Deferred costs on uncompleted contracts	134	500
Net investment in sales-type leases and other current assets	580	344
Other non-current assets	1,261	341
Accounts payable	2,485	(967)
Accrued liabilities	513	191
Deferred revenue and other current liabilities	290	(890)
Other liabilities	(1,452)	(514)
Net cash used in operating activities	(8,539)	(8,962)
Investing activities:		
Payments related to POWERHOUSE™ license	(132)	(191)
Purchases of property and equipment	(84)	(26)
Net cash used in investing activities	(216)	(217)
Financing activities:		
Proceeds from warrant exercises	940	9,109
Proceeds from issuance of 2018 Notes	-	4,545
Proceeds from Investor Notes	109	2,118
Repayment of 2016 and 2018 Notes	(256)	-
Proceeds from the issuance of common stock with warrants	3,285	830
Transaction costs	(355)	-
Net cash provided by financing activities	3,723	16,602
Net decrease in cash	(5,032)	7,423
Cash at beginning of period	5,831	1,170
Cash at end of period	\$ 799	\$ 8,593
Non-cash items		
Debt discount arising from 2018 Note Offering	\$ -	\$ 10,088
Embedded derivative liability with 2018 Note Offering	-	12,987
Common stock warrant liability with 2018 Note Offering	-	6,818
Issuance of Class A common stock for conversion of 2018 Notes	421	17,063
Issuance of Class A common stock for exercise of common stock warrants	309	3,814
Accrued closing costs on the 2018 Notes	-	430
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. RGS is the exclusive worldwide manufacturer and distributor of the POWERHOUSE™ in-roof solar shingle, an aesthetically pleasing solar shingle system. The POWERHOUSE™ in-roof solar shingle uses technology developed by The Dow Chemical Company (“Dow”). While Dow holds all applicable patents, RGS has licensed the exclusive domestic and international rights to commercialize POWERHOUSE™ and has the rights and obligations to maintain and prosecute the patents and invest in research and development to achieve future technological advances in productivity and output efficiency. Additionally, RGS is a solar energy engineering, procurement and construction (“EPC”) firm serving residential and small commercial customers in the state of Hawaii and small commercial customers in the northeast section of the United States. To these customers, RGS offers turnkey services, including design, procurement, permitting, build-out, grid connection, financing referrals and warranty and customer satisfaction activities.

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 (“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, the Company’s condensed consolidated balance sheet as of September 30, 2019, the interim results of operations for the three months and nine months ended September 30, 2019 and 2018, changes in equity during the reporting periods for the nine months ended September 30, 2019 and 2018 and cash flows for the nine months ended September 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 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.

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.

As of September 30, 2019, we had cash of \$0.8 million, working capital of \$0.4 million and shareholders' equity of \$4.5 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. On April 2, 2019, the Company closed the April 2019 Offering (as defined and discussed below). On September 30, 2019, the Company filed an offering statement on Form 1-A for a subscription rights offering, as further discussed in Note 4. Security Offerings.

The Company intends to use net proceeds, if any, from the Rights Offering (i) in connection with the commercialization of the POWERHOUSE™ product, (ii) to improve our financial position, and (iii) for general corporate purposes, including, without limitation, for working capital purposes. Working capital purposes include payments of accounts payable and pre-payments with our supply chain to manufacture the POWERHOUSE™ product. As part of working capital purposes, the Company plans to use proceeds from the Rights Offering to make cash dividend payments on Series 1 Preferred Stock until cash flow from our operations are positive.

The Company has historically incurred a cash outflow from its operations as 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. The Company obtained UL certification for POWERHOUSE™ at the close of 2018, and only recently began the nationwide commercialization of POWERHOUSE™ 3.0. As of September 30, 2019, the Company had a backlog of \$7.7 million which it expects will result in cash inflows from operations in future periods. To improve the Company's financial condition and to further its commercialization of POWERHOUSE™ 3.0, it is seeking additional capital with a subscription Rights Offering. In the event the Company does not receive any capital with the Rights Offering and its future cash inflows from POWERHOUSE™ 3.0 are not sufficient to cover operating expenses, the Company would evaluate (i) further cost-reduction measures, (ii) sale of assets not associated with POWERHOUSE™, (iii) debt financing, (iv) public or private offerings of its Class A common stock, and (v) 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 the Company will be successful with its plans to grow revenue for profitable operations.

2. Significant Accounting Policies

Except as noted below, the Company made no changes to its significant accounting policies during the three and nine months ended September 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 Financial Accounting Standards Board ("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 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 FASB 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 accounting standard related to leases to increase transparency and comparability among organizations by requiring the recognition of 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 no impact on retained earnings 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 ROU 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 nine months ended September 30, 2019 were \$0.2 million and \$0.8 million respectively. Cash paid for amounts included in the measurement of lease liabilities amounted to \$0.2 million and \$0.8 million for the three months and nine months ended September 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:

	September 30, 2019
Weighted Average Remaining Lease Term	
Operating Leases	2.30 years
Weighted Average Discount Rate	
Operating Leases	15%

Maturities of lease liabilities are as follows:

	September 30, 2019
Maturities of lease liabilities	
2019	\$ 703
2020	622
2021	238
2022	6
2023	-
Thereafter	-
Total lease payments	1,569
Less imputed interest	(253)
Total	<u>\$ 1,316</u>

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 estimated 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 terms.

Maturities of lease receivables are as follows:

	September 30, 2019
Maturities of lease receivables	
2019	\$ 21
2020	84
2021	86
2022	87
2023	89
Thereafter	1,068
Total lease receivables	1,435
Less imputed interest	(598)
Present value of lease receivables	837
Plus Unguaranteed residual	252
Plus Deferred operations and maintenance expenses	58
Less Initial direct costs	(80)
Total	\$ 1,067

The components of the Company's aggregate net investment in sales-type leases as of September 30, 2019 include lease receivables of \$1.4 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. Securities Offerings

April 2019 Class A Common Stock 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 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. 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 September 30, 2019. They have been reflected at their grant date fair value and will be reassessed if it becomes probable that the placement agent warrants will be redeemable.

Rights Offering

On September 30, 2019, the Company filed an offering statement on Form 1-A with the Securities and Exchange Commission (“SEC”) under Regulation A for a subscription Rights Offering (“Rights Offering”). Under the Rights Offering, RGS will distribute to each holder of its Class A common stockholders and each holder of outstanding warrants to purchase Class A common stock, ten non-transferable subscription rights, each allowing the holder to purchase one share of Series 1 non-convertible preferred stock for \$10 per share for each one share of Class A common stock owned or purchasable under such warrants as of a to-be-determined record date. Each share of the preferred stock will be entitled to a dividend representing a 12% yield on the purchase price, payable quarterly, in cash or in additional shares of Series 1 preferred stock, at the Company’s option, and have 100 votes on all matters submitted to a vote of the holders of Class A common stock. The Form 1-A offering circular covers an offering of up to \$20,000,000 of Series 1 preferred stock. The Company intends to use the proceeds for commercialization of its POWERHOUSE™ solar shingle and general corporate purposes. The Company intends the Series 1 preferred stock to be qualified to trade in the over-the-counter market and to be quoted on the OTCQX marketplace operated by the OTC Markets Group. On October 30, 2019, November 7, 2019 and November 12, 2019, the Company filed amendments to the Form 1-A to address SEC comments and make updates.

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 \$0.7 million at September 30, 2019 and December 31, 2018.

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

	September 30, 2019	December 31, 2018
Productive material, work in process and supplies	\$ 785	\$ 92
Finished product, including service parts, etc.	4,513	2,174
Total inventories	5,298	2,266
Reserve for obsolescence	(659)	(671)
Total inventories, net	<u>\$ 4,639</u>	<u>\$ 1,595</u>

6. Accrued Liabilities

Accrued liabilities consist of the following:

(in thousands)	September 30, 2019	December 31, 2018
Accrued Expenses	\$ 562	\$ 924
Inventory received not billed	1,015	240
Accrued Compensation	424	476
Other	45	69
Accrued Project Costs	32	102
Total	<u>\$ 2,078</u>	<u>\$ 1,811</u>

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. Additionally, Mobomo provides data hosting services which totaled approximately \$8,000 for the nine months ended September 30, 2019 and \$20,000 for the year ended December 31, 2018.

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 nine months ended September 30, 2018, the Company issued stock options under the 2018 Long-Term Incentive Plan ("2018 LTIP"), however, none of these options were exercised during the three and nine months ended September 30, 2019. During the three and nine months ended September 30, 2019, the Company granted 20,000 and 1,140,000 stock options and canceled 67,099 and 4 stock options, respectively. Additionally, on September 3, 2019, the Company issued 201,000 shares of restricted Class A common stock under the 2018 LTIP. Such shares fully vest upon the one-year anniversary of the grant date.

Related specifically to the Company's issuance of convertible notes and warrants on April 9, 2018 (the "2018 Convertible Note Offering"), 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 nine months ended September 30, 2019. No such conversions or exercises took place during the three months ended September 30, 2019.

As discussed in Note 4. April 2019 Offering, the Company issued the Series R Warrants, Series S Warrants and placement agent warrants. The Company issued 5,008,164 shares of Class A common stock upon exercise of 9,416,328 Series R Warrants during the three months ended September 30, 2019. During the nine months ended September 30, 2019, the Company issued 1,430,141 shares of Class A common stock upon exercise of all of the Series S Warrants and 8,697,009 shares of Class A common stock upon the exercise of 13,105,263 Series R Warrants.

At September 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	1,074,129
Common stock warrants outstanding	14,157,157
Total shares reserved for future issuance	<u>15,231,286</u>

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 as of June 30, 2019 between the Monte Carlo and Black Scholes models, the Company has utilized Black Scholes to revalue 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 September 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	\$ 588	-	-	\$ 588
	<u>\$ 588</u>	<u>-</u>	<u>-</u>	<u>\$ 588</u>

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 September 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	(167)	1,069	-	902
Adjustment for exercise of common stock warrant liabilities	(241)	(3,189)	(250)	(3,680)
Fair value of financial liabilities at September 30, 2019	<u>\$ 103</u>	<u>\$ 485</u>	<u>\$ -</u>	<u>\$ 588</u>

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 September 30, 2019	\$ 0.19	N/a	\$ 0.13	1.55%	0.00%	153%	3.52
Series R Common Stock Warrant Liability September 30, 2019	\$ 0.20	N/a	\$ 0.13	1.56%	0.00%	153%	4.51

Other Financial Instruments

The Company's financial instruments consist primarily of cash and cash equivalents, accounts receivable, and accounts payable. 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:

(in thousands)	Three Months ended September 30,		Nine Months ended September 30,	
	2019	2018	2019	2018
Contract revenue:				
Solar Division	\$ 2,085	\$ 3,895	\$ 6,333	\$ 10,274
POWERHOUSE™	139	-	310	-
Other	1	20	38	32
Consolidated contract revenue	\$ 2,225	\$ 3,915	\$ 6,681	\$ 10,306
Operating loss:				
Solar Division	\$ (591)	\$ (884)	\$ (2,740)	\$ (2,880)
POWERHOUSE™	(554)	(43)	(2,019)	(150)
Other	(1,466)	(2,150)	(5,706)	(8,646)
Operating loss	(2,611)	(3,077)	(10,465)	(11,676)
Reconciliation of consolidated loss from operations to consolidated net loss:				
Change in fair value of derivative liabilities and loss on debt extinguishment	588	(14,366)	(857)	(17,413)
Amortization of debt discount and deferred loan costs	-	(866)	(287)	(2,301)
Other income	212	13	232	998
Net loss	\$ (1,811)	\$ (18,296)	\$ (11,377)	\$ (30,392)

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)	September 30, 2019	December 31, 2018
Total assets:		
Solar Division	\$ 6,100	\$ 7,136
POWERHOUSE™	7,906	4,298
Other	(103)	4,826
	\$ 13,903	\$ 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 Reports on Form 10-Q for the periods ended March 31, 2019, June 30, 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) POWERHOUSE™ – the manufacturing and sales of solar shingles; (2) Solar Division – the installation of solar energy systems for both homeowners and business owners (commercial) in Hawaii and small business owners (commercial) in the mainland United States; 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 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 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 September 30, 2019, we have invested approximately \$3.4 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 unutilized 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 GAAP.

For the three months ended September 30, 2018, the Company employed its own installation crews as compared to the Company utilizing authorized integrators during the three months ended September 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 percentage including idle time shown below is due to the impact of indirect fixed costs spread over lesser installation revenue.

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2019	2018	2019	2018
Gross margin % on actual installation time	22%	25%	23%	24%
Gross margin % including idle time	8%	29%	4%	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 GAAP 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 nine-month period ended September 30, 2019:

(in thousands)	Exited Mainland				
	Sunetric	Small Commercial	Residential	Solar Division	POWERHOUSE™
Backlog at January 1, 2019	\$ 783	\$ 5,754	\$ 9,120	\$ 15,657	\$ -
Bookings from new awards ("Sales")	989	1,419	5,713	8,121	66
Cancellations and reductions on existing contracts	(62)	(53)	(4,388)	(4,503)	-
Amounts recognized in revenue upon installation	(120)	(104)	(1,162)	(1,386)	(65)
Backlog at March 31, 2019	1,590	7,016	9,283	17,889	1
Bookings from new awards ("Sales")	1,356	2,096	157	3,609	7,802
Cancellations and reductions on existing contracts	(164)	1	(4,245)	(4,408)	-
Amounts recognized in revenue upon installation	(610)	(320)	(849)	(1,779)	(105)
Backlog at June 30, 2019	2,172	8,793	4,346	15,311	7,698
Bookings from new awards ("Sales")	4,097	482	116	4,695	230
Cancellations and reductions on existing contracts	(117)	(70)	(1,973)	(2,160)	-
Amounts recognized in revenue upon installation	(463)	(414)	(528)	(1,405)	(197)
Backlog at September 30, 2019	\$ 5,689	\$ 8,791	\$ 1,961	\$ 16,441	\$ 7,731

Critical Accounting Policies and Estimates

There were no material changes to our critical accounting policies or estimates during the nine months ended September 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, as further discussed in Note 3 Leases

Results of Operations

Three Months Ended September 30, 2019 Compared to Three Months Ended September 30, 2018

Contract revenue:

Sale and installation of solar energy systems. Sale and installation of solar energy system revenue decreased by \$1.9 million, or 53%, to \$1.7 million during the three months ended September 30, 2019, from \$3.6 million during the three months ended September 30, 2018. The decrease in revenue reflects 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 \$1.3 million, or 43%, to \$1.8 million during the three months ended September 30, 2019, from \$3.0 million during the three months ended September 30, 2018. The reduction of contract expenses reflects the lower revenue for the three months ended September 30, 2019 as compared to the same period in 2018.

Customer acquisition: Customer acquisition expense decreased \$0.5 million during the three months ended September 30, 2019, or 64%, to \$0.3 million from \$0.8 million during the three months ended September 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 September 30, 2019 was \$2.3 million compared to \$2.6 million during the three months ended September 30, 2018, a decrease of \$0.3 million, or 11%, 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 three months ended September 30, 2018, the issuance of the 2018 convertible notes, subsequent conversions and revaluation of the derivative liabilities resulted in a net loss of \$14.4 million and interest expense of \$0.9 million due to the accretion of the debt discount and amortization of deferred loan costs. During the three months ended September 30, 2019 we recorded a net gain of \$0.6 million related to the change in fair value of derivative liabilities associated with warrants issued in the April 2019 Offering.

Nine Months Ended September 30, 2019 Compared to Nine Months Ended September 30, 2018

Contract revenue:

Sale and installation of solar energy systems. Sale and installation of solar energy system revenue decreased \$4.4 million, or 46%, to \$5.1 million during the nine months ended September 30, 2019, from \$9.5 million during the nine months ended September 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 \$3.4 million, or 39%, to \$5.5 million during the nine months ended September 30, 2019, from \$8.9 million during the nine months ended September 30, 2018, which corresponds to the reduction of installation revenue during this same time comparison.

Customer acquisition: Customer acquisition expense decreased \$0.9 million during the nine months ended September 30, 2019, or 32%, to \$1.9 million from \$2.8 million during the nine months ended September 30, 2018. The decrease in customer acquisition resulted from management's decision to exit the mainland residential solar business.

Operating expense: Operating expenses increased \$0.4 million, or 5%, to \$7.9 million during the nine months ended September 30, 2019 compared to \$7.5 million during the nine months ended September 30, 2018, primarily due to expansion of POWERHOUSE™ operations over the previous 12-month period.

Goodwill Impairment: As of September 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 nine months ended September 30, 2018, the issuance of the 2018 convertible notes, subsequent conversions and revaluation of the derivative liabilities resulted in a net loss of \$17.4 million and interest expense of \$2.3 million due to the accretion of the debt discount and deferred loan costs related to the 2018 Convertible Note Offering. During the nine months ended September 30, 2019 we recorded a net loss of \$0.9 million related to the change in fair value of derivative liabilities associated with warrants issued with the April 2019 Offering and \$0.3 million related to amortization of debt discount and deferred loan costs attributable to the 2018 convertible notes.

Other (income) expenses: During the nine months ended September 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.

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 with residential and commercial customers in Hawaii.

As of September 30, 2019, we had cash of \$0.8 million, working capital of \$0.4 million and shareholders' equity of \$4.5 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. On April 2, 2019, we closed the April 2019 Offering (as defined and discussed below). On September 30, 2019, we filed an offering statement on Form 1-A for a subscription rights offering, as further discussed in Note 4. Security Offerings.

We intend to use net proceeds, if any, from the Rights Offering (i) in connection with the commercialization of the POWERHOUSE™ product, (ii) to improve our financial position, and (iii) for general corporate purposes, including, without limitation, for working capital purposes. Working capital purposes include payments of accounts payable and pre-payments with our supply chain to manufacture the POWERHOUSE™ product. As part of working capital purposes, we plan to use proceeds from the Rights Offering to make cash dividend payments on Series 1 Preferred Stock until cash flow from our operations are positive.

We have historically incurred a cash outflow from its operations as 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 only recently began the nationwide commercialization of POWERHOUSE™ 3.0. As of September 30, 2019, we had a backlog of \$7.7 million which we expect will result in cash inflows from operations in future periods. To improve our financial condition and to further commercialization of POWERHOUSE™ 3.0, we are seeking additional capital with a subscription Rights Offering. In the event we do not receive any capital with the Rights Offering and our future cash inflows from POWERHOUSE™ 3.0 are not sufficient to cover operating expenses, we would evaluate (i) further cost-reduction measures, (ii) sale of assets not associated with POWERHOUSE™, (iii) debt financing, (iv) public or private offerings of its Class A common stock, and (v) 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 the Company will be successful with its plans to grow revenue for profitable operations.

Cash Flows

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

	For the Nine Months Ended September 30,	
	2019	2018
Net cash (used in) provided by:		
Operating activities	\$ (8,539)	\$ (8,962)
Investing activities	(216)	(217)
Financing activities	3,723	16,602
Net increase (decrease) in cash	<u>\$ (5,032)</u>	<u>\$ 7,423</u>

Operating activities. Our operating activities used net cash of \$8.5 million and \$9.0 million during the nine months ended September 30, 2019 and 2018, respectively. Our decrease in cash used in operations of \$0.5 million was primarily attributable to our exit from the residential mainland business at the end of the March 2019.

Investing activities. Cash used in investing activities during the nine months ended September 30, 2019 and 2018, was immaterial.

Financing activities. We raised net cash of approximately \$3.7 million from the issuance of securities related to the April 2019 Offering during the nine months ended September 30, 2019, as compared to \$16.6 million during the nine months ended September 30, 2018 from the issuance of securities related to the 2018 Convertible Note Offering.

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 and our Quarterly Reports on Form 10-Q for the periods ended March 31, 2019 and June 30, 2019, and this report, which are 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 September 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 September 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 September 30, 2019.

Item 1A. Risk Factors

There have been no material changes from the risk factors disclosed in Item 1A of the Company's 2018 10-K and Form 10-Q for the period ended June 30, 2019.

The Office of the President of the United States' trade war with China could further increase our cost of goods sold, which could cause us to further raise our prices and harm customer demand for our product.

The tariffs on solar cells and photovoltaic modules from China imposed by the Office of the President of the United States has increased our cost of goods sold by 26% which increases significantly the price we would otherwise be able to sell our solar shingle. Further escalation in the ongoing trade war with China or other changes in US trade policy could result in increased costs for solar components imported from China, which may reduce customer demand for our product, or China limiting its trade with the US, any of which would adversely affect our sales, business, financial condition and results of operation.

There can be no assurance that we will raise a material amount of capital as a result of our planned rights offering.

There can be no assurance that our stockholders and warrants holders will exercise a material number of rights in our planned rights offering. Further, completion of our planned rights offering is not subject to our raising a minimum offering amount. As such, we may not raise a material amount of proceeds from our planned rights offering and the amount raised, if any, may not be sufficient to meet our business objectives, including the further commercialization of the POWERHOUSE™ product. If we fail to raise a material amount of money in our planned rights offering or raise capital from other sources, we would anticipate having to scale back our growth plans and operating expenses, which will curtail the progress of our business.

The Series 1 preferred stock we plan to issue in our planned rights offering will have a liquidation preference and will have significantly higher voting power than the Class A common stock.

The Series 1 preferred stock we plan to issue in our planned rights offering will have a liquidation preference of \$10.00 per share, equal to its purchase price. In the event of our bankruptcy, liquidation or winding up, we would be obligated first to pay all of our liabilities, thereafter, this liquidation preference, and only thereafter any remaining amounts to holders of our Class A common stock. In the event of our bankruptcy, liquidation or winding up, there can be no assurance that there would be sufficient assets available for us to make any such payments. Any liquidation, winding up or dissolution of the company or of any of its wholly or partially owned subsidiaries would have a material adverse effect on holders of the Series 1 preferred stock and Class A common stock.

In addition, except as required by law, each holder of shares of Series 1 preferred stock will be entitled to 100 votes for each share of Series 1 preferred stock held as of the applicable record date as though each share of Series 1 preferred stock were 100 shares of our Class A common stock. As a result, depending on how many shares of Series 1 preferred stock we will issue in our planned rights offering, if any, holders of shares of Series 1 preferred stock may be able to outvote holders of shares of Class A common stock.

Item 6. Exhibits.

<u>Exhibit No.</u>	<u>Description</u>
<u>10.1</u>	<u>Form of Real Goods Solar, Inc. Restricted Stock Agreement (Incorporated by reference to Exhibit 10.1 to Real Goods Solar, Inc.'s Current Report on Form 8-K filed September 5, 2019 (Commission File No. 001-34044)).</u>
<u>10.2</u>	<u>Technology Services Agreement, created September 28, 2017, between Real Goods Solar, Inc. and The Dow Chemical Company (Incorporated by reference to Exhibit 6.52 to Real Goods Solar, Inc.'s Offering Statement on Form 1-A/A-2 filed November 7, 2019) (Commission File No. 024-11087).</u>
<u>10.3</u>	<u>Sales Agreement-Surplus Property, dated September 29, 2017, between Real Goods Solar, Inc. and The Dow Chemical Company (Incorporated by reference to Exhibit 6.53 to Real Goods Solar, Inc.'s Offering Statement on Form 1-A/A-2 filed November 7, 2019) (Commission File No. 024-11087).</u>
<u>31.1*</u>	<u>Certification of the Chief Executive Officer pursuant to Rule 13a-14(a) under the Securities Exchange Act of 1934</u>
<u>31.2*</u>	<u>Certification of the Chief Financial Officer pursuant to Rule 13a-14(a) under the Securities Exchange Act of 1934</u>
<u>32.1**</u>	<u>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</u>
<u>32.2**</u>	<u>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</u>
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.
(Registrant)

Date: November 12, 2019

By: /s/ Dennis Lacey
Dennis Lacey
Chief Executive Officer and Director
(Authorized Officer)

Date: November 12, 2019

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

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: November 12, 2019

/s/ Dennis Lacey

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

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: November 12, 2019

/s/ Alan Fine

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

**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 September 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: November 12, 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.

**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 September 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: November 12, 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.
