

**UNITED STATES
SECURITIES AND EXCHANGE COMMISSION**

Washington, D.C. 20549

FORM 10-K

(Mark One)

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

For the fiscal year ended December 31, 2018

OR

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

Commission File Number 001-36642

VIVINT SOLAR, INC.

(Exact name of Registrant as specified in its Charter)

Delaware
(State or other jurisdiction of
incorporation or organization)

1800 West Ashton Blvd.

Lehi, UT

(Address of principal executive offices)

45-5605880
(I.R.S. Employer
Identification No.)

84043
(Zip Code)

Registrant's telephone number, including area code: (877) 404-4129

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

Title of each class

Name of each exchange on which registered

Common Stock, par value \$0.01 per share

New York Stock Exchange

Securities registered pursuant to Section 12(g) of the Act: None

Indicate by check mark if the Registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. YES NO

Indicate by check mark if the Registrant is not required to file reports pursuant to Section 13 or 15(d) of the Act. YES NO

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 if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K (§229.405) is not contained herein, and will not be contained, to the best of Registrant's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K.

Indicate by check mark whether the Registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a 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 Exchange Act). YES NO

The aggregate market value of the voting common equity held by non-affiliates of the Registrant, based on the closing price of the shares of common stock on the New York Stock Exchange on June 29, 2018, the last business day of the Registrant's most recently completed second fiscal quarter, was approximately \$168.4 million.

The number of shares of Registrant's common stock outstanding as of March 1, 2019 was 120,193,303.

Portions of the Registrant's Definitive Proxy Statement relating to the Annual Meeting of Shareholders, scheduled to be held on June 27, 2019, are incorporated by reference into Part III of this report.

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PART I

Forward-looking Statements

This report, including the sections entitled “Business,” “Risk Factors,” and “Management’s Discussion and Analysis of Financial Condition and Results of Operations” and certain information incorporated by reference into this report contain forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended. Forward-looking statements are identified by words such as “believe,” “anticipate,” “expect,” “intend,” “plan,” “will,” “may,” “seek” and other similar expressions. You should read these statements carefully because they discuss future expectations, contain projections of future results of operations or financial condition or state other “forward-looking” information. These statements relate to our future plans, objectives, expectations, intentions and financial performance and the assumptions that underlie these statements.

These forward-looking statements include, but are not limited to:

- federal, state and local regulations and policies governing the electric utility industry;
- the regulatory regime for our offerings and for third-party owned solar energy systems;
- technical limitations imposed by operators of the power grid;
- the continuation of rebates, tax credits and incentives, including changes to the rates of the investment tax credit, or ITC, beginning in 2020;
- the price of utility-generated electricity and electricity from other sources;
- our ability to finance the installation of solar energy systems;
- our ability to efficiently install and interconnect solar energy systems to the power grid;
- our ability to manage growth, product offering mix and costs;
- our ability to further penetrate existing markets and expand into new markets;
- our ability to develop new product offerings and distribution channels;
- our relationships with our sister company Vivint, Inc., or Vivint, and The Blackstone Group L.P., our Sponsor;
- our ability to manage our supply chain;
- the cost of equipment and the residual value of solar panels after the expiration of our long-term customer contracts;
- the course and outcome of litigation and other disputes; and
- our ability to maintain our brand and protect our intellectual property.

In combination with the risk factors we have identified, we cannot assure you that the forward-looking statements in this report will prove to be accurate. Further, if our forward-looking statements prove to be inaccurate, the inaccuracy may be material. In light of the significant uncertainties in these forward-looking statements, you should not regard these statements as a representation or warranty by us or any other person that we will achieve our objectives and plans in any specified time frame, or at all, or as predictions of future events. Moreover, neither we nor any other person assumes responsibility for the accuracy and completeness of the forward-looking statements. We undertake no obligation to publicly update any forward-looking statements, whether as a result of new information, future events or otherwise, except as required by law.

Item 1. Business.

BUSINESS

Overview

We were incorporated as Vivint Solar, Inc., a Delaware corporation, in 2011. We offer distributed solar energy — electricity generated by a solar energy system installed at or near customers’ locations — to residential customers primarily through a customer-focused and neighborhood-driven direct-to-home sales model. Through investment funds, we own a substantial majority of the solar energy systems we install and provide solar electricity pursuant to long-term contracts with our customers. Additionally, we wholly own a smaller number of solar energy systems outside of investment funds. We also sell solar energy systems outright to customers.

Customers that enter long-term contracts pay little to no money upfront, typically receive savings on solar-generated electricity rates relative to utility-generated electricity rates following system interconnection to the power grid and continue to benefit from locked-in energy prices over the term of their contracts, insulating them against unpredictable increases in utility rates. The majority of these customers sign 20-year contracts for solar electricity generated by our systems and pay us directly over the term of their contracts.

Our 20-year customer contracts generate predictable, recurring cash flows and establish a long-term relationship with homeowners. As of December 31, 2018 the average estimated nominal contracted payment for our long-term customer contracts was approximately \$28,600, and there is the potential for additional payments if customers choose to renew their contracts at the end of the term. The ownership of the solar energy systems we install under long-term customer contracts allows us and the other fund investors to benefit from various local, state and federal incentives. We obtain financing based on cash flows from customers and these incentives. When customers decide to move or sell the home prior to the end of their contract term, the customer contracts allow our customers to transfer their obligations to the new home buyer. If the home buyer does not wish to assume the customer's obligations, the contract allows us to require the customer to purchase the system. Our sources of financing are used to offset our direct installation costs and our allocated overhead expenses. As of February 28, 2019, we had raised 25 investment funds to which investors such as banks and other large financial investors have committed to invest approximately \$1.9 billion. The undrawn committed capital for these funds as of February 28, 2019 was approximately \$176 million, which we estimate will fund approximately 86 megawatts of future deployments.

We also offer our customers the option to purchase solar energy systems for cash or through third-party loan financing. Selling solar energy systems allows us to address customers who prefer to own the solar energy system and assume the long-term benefits and risks of system ownership. Customers who choose this option are generally eligible for various local, state and federal incentives, which may help to offset the cost of their solar energy system.

We have developed an integrated approach to providing residential distributed solar energy where we fully control the lifecycle of our customers' experience including the initial professional consultation, design and engineering process, installation, and ongoing monitoring and service. We deploy our sales force on a neighborhood-by-neighborhood basis, which allows us to cultivate a geographically concentrated customer base that reduces our costs and increases our operating efficiency. We couple this model with repeatable and scalable processes to establish warehouse facilities, assemble and train sales and installation teams and open new offices. We believe that our processes enable us to expand within existing markets and into new markets. We also believe that our direct sales model and integrated approach represent a differentiated platform, unique in the industry, that maximizes sales effectiveness, delivering high levels of customer satisfaction and driving cost efficiency.

From our inception in May 2011 through December 31, 2018, we have installed solar energy systems with an aggregate of 1,060.9 megawatts of capacity at approximately 154,600 homes for an average solar energy system capacity of approximately 6.9 kilowatts.

Our Approach

The key elements of our integrated approach to providing distributed solar energy include:

- *Professional consultation* . We deploy our direct-to-home sales force to provide in-person professional consultations to prospective customers to evaluate the feasibility of installing a solar energy system at their residence. Our sales closing and referral rates are enhanced by homeowners' responsiveness to our direct-to-home, neighborhood-by-neighborhood outreach strategy.
- *Design and engineering* . We have developed a process that enables us to design and install a custom solar energy system that delivers customer savings. This process, which incorporates proprietary software, standardized templates and data derived from on-site surveys, allows us to design each system to comply with complex and varied state and local regulations and optimize system performance on a per panel basis. We continue to pursue technology innovation to integrate accurate system design into the initial sales consultation process as a competitive tool to enhance the customer experience and increase sales close rates.
- *Installation* . We are a licensed contractor in the markets we serve and are responsible for each customer installation. Once we complete the system design, we obtain the necessary building permits and begin installation. Upon completion, we schedule the required inspections and arrange for interconnection to the power grid. By directly handling these logistics, we control quality and streamline the system installation process for our customers. Throughout this process, we apprise our customers of the project status with regular updates from our account representatives.

- *Monitoring and service* . We monitor the performance of our solar energy systems, leveraging a combination of internally developed solutions as well as capabilities provided by our suppliers. Our systems use communication gateways and monitoring services to collect performance data, and we use this data to ensure that we deliver quality operations and maintenance services for our solar energy systems. If services are required, our strong local presence enables rapid response times.
- *Referrals* . We believe our commitment to delivering customer satisfaction and our concentrated geographic deployment strategy have generated sales through customer referrals, which increase our neighborhood penetration rates and drive our growth. Our financial returns also benefit from the cost savings derived from increasing the density of installations in a neighborhood.

Our Strategy

Our goal is to become the premier provider of distributed solar energy. Key elements of our strategy include:

- *Building the most sustainable business in the residential solar industry*. We are working to enhance the sustainability of our business by striving to improve the margins we generate on every system we install. We improve our margins by reducing our cost per watt over time, by pricing appropriately in each market and by growing in the right markets. We seek to balance our growth against the operating cash flows and project funding required to offset our operating expenses.
- *Delighting our customers*. We strive to provide a best-in-class customer experience. We offer customized solar energy solutions to each of our customers based on their individual situation and needs, and we are streamlining the time from when a customer signs a contract to when their system is operational. We are also continually working to improve our processes and customer communication in an effort to provide superior customer service. Additionally, we employ a detailed quality assessment process to our installations to validate that we maintain a high installation standard.
- *Developing a differentiated solution*. We aim to provide unique products in an increasingly commoditized industry, and we believe the market needs smart energy solutions that combine how energy is produced, made available and intelligently consumed. We have formed strategic relationships to develop and provide distinctive solutions to our customers, such as battery storage and electric vehicle charging products.
- *Accessing capital on favorable terms*. We partner with various investors to form investment funds that monetize the recurring customer payments under our long-term customer contracts, as well as the ITCs, accelerated tax depreciation and other incentives associated with residential solar energy systems. We have also entered into financing facilities to further monetize recurring cash flows and to fund solar energy system development. We plan to pursue additional debt, equity and other financing strategies in order to access capital on favorable terms to enable our continued growth.
- *Growing strategically*. We operate in states whose utility prices, sun exposure, climate conditions and regulatory policies provide the most compelling markets for distributed solar energy. We plan to enlarge our addressable market by expanding our presence to new states on a measured basis. For example, we complement our traditional long-term customer contracts by providing customers the option to purchase solar energy systems outright, which allows us to enter markets where customers prefer to own their solar energy systems or where our traditional, long-term customer contracts are not permitted by local regulations or are not economically feasible. Additionally, we have become more selective in our policies to increase the incremental value of each installation by limiting the installation of smaller system sizes, limiting installations on certain roof types and raising prices in certain markets. We are also expanding into new customer acquisition channels such as homebuilders and retailers.

Customer Contracts

Our primary product offerings include the following:

- *Power Purchase Agreements*. Under power purchase agreements, or PPAs, we charge customers a fee per kilowatt hour based on the electricity production of the solar energy system, which is billed monthly. PPAs typically have a term of 20 years and are subject to an annual price escalator of 2.9%. Over the term of the PPA, we operate the system and agree to maintain it in good condition. Customers who buy energy from us under PPAs are covered by our workmanship warranty equal to the length of the term of these agreements.

- *Legal-form Leases.* Under legal-form leases, or Solar Leases, we charge customers a fixed monthly payment to lease the solar energy system, which is based on a calculation that accounts for expected solar energy generation. Solar Leases typically have a term of 20 years and are typically subject to an annual price escalator of 2.9% , though some markets offer Solar Leases with no annual price escalator. We provide our Solar Lease customers a performance guarantee, under which we agree to refund certain payments to the customer if the solar energy system does not meet the guaranteed production level in the prior 12-month period. Over the term of the Solar Lease, we operate the system and agree to maintain it in good condition , and in some markets we offer to install a battery storage system along with the solar energy system. Customers who lease equipment from us under Solar Leases are covered by our workmanship warranty equal to the length of the term of these agreements.
- *Solar Energy System Sales.* Under solar energy system sales, or System Sales, we offer our customers the option to purchase solar energy systems for cash or through third-party financing. The price for these contracts is determined as a function of the respective market rate and the size of the solar energy system to be installed. Customers can additionally contract with us for certain structural upgrades, smart home products, battery storage systems, electric vehicle charging stations and other accessories in connection with the installation of a solar energy system based on the market where they are located. We believe System Sales are advantageous to us as they provide immediate access to cash.

Of our 196.0 megawatts installed in 2018, approximately 79% were installed under PPAs, 6% were installed under Solar Leases and 15% were installed under System Sales. As of December 31, 2018, the average FICO score of our customers was approximately 760.

Sales and Marketing

We place our integrated solar energy systems through a scalable sales organization that relies primarily on a direct-to-home sales model. We believe that a direct, customer-facing sales model is important throughout our sales process to maximize our sales success and customer experience. The members of our sales force typically reside and work within the markets they support. We also generate sales volume through customer referrals. Customer referrals increase in relation to our penetration in a market and shortly after market entry become an increasingly effective way to market our solar energy systems.

In addition to direct sales, we sell to customers through our inside sales team and through sales dealer agreements that we have entered into with Vivint and others. We also continue to explore opportunities to sell solar energy systems to customers through a number of other distribution channels, including relationships with real estate management companies, home builders, retailers, large construction, electrical and roofing companies and other third parties that have access to large numbers of potential solar customers.

Operations

Our corporate headquarters are located in Utah. We manage inventory through our local warehouses and maintain a fleet of over 700 trucks and other vehicles to support our installers and operations. In 2018, our field teams completed on average approximately 2,300 residential installations per month. We manage thousands of projects as they move through the stages of engineering, permitting, installation, maintenance and monitoring.

We offer a range of warranties to our investment funds on our solar energy systems under long-term customer contracts to ensure the solar energy systems remain productive. Under our workmanship warranty, we are obligated, at our cost and expense, to correct defects in our installation work, which depending on the particular investment fund, is for periods of five to 20 years. Generally, our maintenance obligations to our investment funds do not include the cost of panels, inverters or racking, should such major components require replacement. The cost of such components is borne instead by the applicable investment fund, although we are obligated to install such equipment as part of our services covered by the agreed maintenance services fee. We provide ongoing service and repairs to solar energy systems under PPAs and Solar Leases during the entire term of the customer relationship. We also agree to provide a workmanship warranty and maintain the solar energy systems we sell to customers through System Sales for a period of one to ten years. We expect the costs we incur in providing these services will continue to grow as the number of systems in our portfolio increases and as installed solar energy systems age.

Suppliers

We purchase solar panels, inverters and other system components from a limited number of suppliers. Substantially all of our solar panels and inverters are produced outside the United States. We generally source the other products related to our solar energy systems through a variety of suppliers and distributors.

If we fail to develop, maintain and expand our relationships with these or other suppliers, our ability to meet anticipated demand for our solar energy systems may be adversely affected, or we may only be able to offer our systems at higher costs or after delays. To reduce risk, we have added suppliers in the module, inverter and racking product groups. If one or more of the suppliers that we rely upon to meet a ntipacated demand ceases or reduces production due to its financial condition, acquisition by a competitor or otherwise, it may be difficult to quickly identify alternative suppliers or to qualify alternative products on commercially reasonable terms, and our ability to satisfy this demand may be adversely affected.

We screen all suppliers and components based on expected cost, reliability, warranty coverage, ease of installation and other ancillary costs. We typically enter into master contract arrangements with our major suppliers that define the general terms and conditions of our purchases, including warranties, product specifications, indemnities, licenses, delivery and other customary terms. We typically purchase solar panels, inverters and racking from our suppliers at then prevailing prices pursuant to purchase orders issued under our master contract arrangements. From time to time we find it advantageous to enter into purchase commitments with our suppliers.

Although the solar panel market has seen an increase in supply, upward pressure on prices may occur due to growth in the solar industry, regulatory policy changes and the resulting increase in demand for solar panels and the raw materials necessary to manufacture them.

On January 22, 2018, the President of the United States announced the imposition of safeguard measures for a period of four years that include (1) a 30% tariff on imports of solar cells not partially or fully assembled into other products and (2) a 30% tariff on imported solar panels. The tariff on imported solar panels will decline 5% each year in the second, third and fourth years. The safeguard measures went into effect on February 7, 2018 and apply to imports from all foreign countries, including Mexico and Canada, except certain developing countries that are members of the World Trade Organization.

On September 17, 2018, the President of the United States announced the imposition of tariffs on \$200 billion of Chinese goods. Inverters imported from China are listed as subject to the new duties. Tariffs of 10% on inverters went into effect on September 24, 2018, and the tariffs were scheduled to rise to 25% on January 1, 2019. In December 2018, the President agreed to suspend further trade action for 90 days, and in February 2019 to further suspended trade action, to continue negotiations and to leave the tariff at the 10% rate for the time being. Our various inverter suppliers are still determining how they will manage these tariffs. We are currently seeing various responses from inverter suppliers to the 10% tariff, ranging from no price increases to passing on the majority of the tariff to the purchaser through price increases. We are unsure how supplier pricing will be affected by the potential implementation of the 25% tariff. Additionally, it remains unclear whether the tariff applies to all components that accompany an inverter, or just to the inverter itself.

Competition

We believe that our primary competitors are the traditional utilities that supply electricity to our potential customers. We compete with these traditional utilities primarily based on price (cents per kilowatt hour), predictability of future prices (by providing pre-determined annual price escalations) and the ease by which customers can switch to electricity generated by our solar energy systems. We believe that we compete favorably with traditional utilities based on these factors in the states where we operate.

We also compete with companies that are not regulated like traditional utilities but that have access to the traditional utility electricity transmission and distribution infrastructure pursuant to state and local pro-competitive and consumer choice policies, as well as with national and local solar companies such as Tesla's SolarCity subsidiary and Sunrun Inc. These companies may offer products that are similar to our PPAs, Solar Leases and System Sales. We believe that we compete favorably with these companies.

In addition, we compete with solar companies in the downstream value chain of solar energy. For example, we face competition from purely finance driven organizations that acquire customers and then subcontract out the installation of solar energy systems, from installation businesses that seek financing from external parties, from large construction companies and utilities and increasingly from sophisticated electrical and roofing companies. These distributed energy competitors typically employ contractual arrangements with third parties, leaving the customer in the position of having to deal with different companies for different aspects of their solar energy systems. We believe that we compete favorably with these companies because we offer an integrated approach to residential solar energy systems, which includes in-house sales, financing, engineering, installation, maintenance and monitoring. Many of our competitors offer only a subset of the services we provide. Aside from simple cost efficiency, we offer distinct practical benefits as an all-in-one provider such as providing a single point of contact and accountability for our offerings during the relationship with our customers. We primarily use our own installation teams, enabling us to better scale our business while maintaining quality control.

We also compete with solar companies that offer community solar products and utility companies that provide renewable power purchase programs. Some customers may choose to subscribe to a community solar project or renewable subscriber programs instead of installing a solar energy system on their home, which could affect our sales. Additionally, some utility companies (and some utility-like entities, such as community choice aggregators in California) have generation portfolios that are increasingly renewable in nature. We believe we compete favorably with these options.

Technology and Intellectual Property

We, directly or through our wholly owned subsidiary Solmetric Corporation, also known as Vivint Solar Labs, have a number of patents and pending applications with the U.S. Patent and Trademark Office. These patents and applications relate to shade and site analysis, installation and monitoring technologies. Our issued patents start expiring in 2026. We intend to file additional patent applications as we innovate through our research and development efforts. Vivint Solar Labs is our research and development team focused on technologies that we believe will benefit our business, as they have significant experience with photovoltaic hardware and installation instruments.

As part of our strategy, we may expand our technological capabilities through targeted acquisitions, licensing technology and intellectual property from third parties, joint development relationships with partners and suppliers and other strategic initiatives as we strive to offer the industry's best operational efficiency, performance prediction, operations and management.

Government Regulation, Policies and Incentives

Government Regulation

Except as described below with respect to New York, we are not regulated as a public utility in any of the markets in which we currently operate. As a result, we are not subject to the various federal, state and local standards, restrictions and regulatory requirements applicable to traditional utilities that operate transmission and distribution systems and that have an obligation to serve electric customers within a specified jurisdiction.

In October 2017, the Public Service Commission of the State of New York, or the NYPSC, entered an order determining that residential rooftop solar energy providers are “electric corporations” (the term for electric utilities under New York state law) and requiring changes that will affect certain aspects of our business. The order, which is part of a broader proceeding before the NYPSC associated with regulating and overseeing distributed energy resource suppliers, is premised on the NYPSC’s determination that it has the jurisdiction to oversee our business, and businesses like ours, in the same way that it oversees public utilities. Though NYPSC is, to our knowledge, the first state public commission to take the position that residential rooftop solar energy providers are subject to the same regulatory oversight as electric utilities, we understand from the Solar Energy Industries Association, or SEIA, that other public service commissions are following what is happening in New York and may take similar action depending on the outcome.

Our operations are subject to stringent and complex federal, state and local laws, including regulations governing the occupational health and safety of our employees and wage regulations. We are subject to the requirements of the federal Occupational Safety and Health Act, as amended, or OSHA, the U.S. Department of Transportation, or DOT, and comparable state laws that protect and regulate employee health and safety. We strive to maintain compliance with applicable OSHA, DOT and similar government regulations; however, as discussed in the section captioned “Risk Factors—Compliance with occupational safety and health requirements and best practices can be costly, and noncompliance with such requirements may result in potentially significant monetary penalties, operational delays and adverse publicity,” there have been instances in which we have experienced workplace accidents and received citations from regulators, resulting in fines. Such instances have not materially impacted our business or relations with our employees.

Government Policies

Net metering is one of several key policies that have enabled the growth of distributed solar in the United States. Net metering allows homeowners to receive credit for the energy that their solar energy system generates in excess of that consumed onsite to offset energy usage at times when the solar installation is not generating energy. In states that provide for net metering, the customer typically pays for the net energy used or receives a credit against future bills at the retail rate if more energy is produced by the solar energy system than consumed onsite. In some states and utility territories, customers are also reimbursed by the electric utility for net excess generation on a periodic basis. Each of the states where we currently serve customers has adopted some form of a net metering policy.

In recent years, net metering programs have been subject to regulatory scrutiny and legislative proposals in some states, such as Arizona, California, Hawaii, Nevada, New Hampshire, New York, Texas and Utah. Utilities are proposing new and varied revisions to their net metering programs, with such proposals decided by the state public utilities commissions. These revisions include capping the numbers of customers that can elect net metering within a utility service territory, imposing new fixed charges for grid service or interconnection, and reducing the retail rate value of the net metered generation. In California, for example, customers within the service territory of San Diego Gas and Electric, Pacific Gas and Electric Company, and Southern California Edison Company, must take service on a new net metering successor tariff. For this new tariff, the California Public Utilities Commission largely uses the current net metering form with full retail compensation for exports but allows the utilities to impose reasonable interconnection fees and some additional charges on customers and will require such customers to take service on time-of-use rates. There are no caps under the new Net Energy Metering, or NEM, successor tariff. Further, municipal utilities are generally not subject to the same state laws and public commission oversight as compared to investor owned utilities and may make drastic and abrupt changes. As we continue to expand into areas with municipal utilities, we may be subject to greater risk of regulatory uncertainty.

Government Incentives

Federal, state and local government and regulatory bodies provide for tariff structures and incentives to various parties including owners, end users, distributors, system integrators and manufacturers of solar energy systems to promote solar energy. These incentives come in various forms, including rebates, tax credits and other financial incentives such as system performance payments, renewable energy certificates associated with renewable energy generation, exclusion of solar energy systems from property tax assessments and net metering. We rely on these governmental and regulatory programs to finance solar energy system installations, which enables us to lower the price we charge customers for energy from our solar energy systems, and to lease or purchase these systems, helping to achieve customer acceptance of solar energy with those customers as an alternative to utility-provided power.

The Federal government currently offers a 30% ITC under Section 48(a) of the Internal Revenue Code for the installation of certain solar power facilities; legislation was passed in December 2015 which extended this 30% rate through December 31, 2019. By statute, the ITC percentage is scheduled to decrease to 26% of the basis of a solar energy system that began construction during 2020, 22% for 2021 and 10% if construction begins after 2021 or the solar energy system is placed into service after 2023.

The economics of purchasing a solar energy system are also improved by eligibility for accelerated tax depreciation, also known as the modified accelerated cost recovery system, or MACRS, which allows for the depreciation of equipment according to an accelerated schedule. The acceleration of depreciation creates a valuable tax benefit that reduces the overall cost of the solar energy system and increases the return on investment.

Some of the states in which we operate offer a personal and/or corporate investment or production tax credit for solar energy that is additive to the ITC. Further, many of the states and local jurisdictions have established property tax incentives for renewable energy systems that include exemptions, exclusions, abatements and credits.

Some state governments, traditional utilities, municipal utilities and co-operative utilities offer a rebate or other cash incentive for the installation and operation of a solar energy system or energy efficiency measures. Capital costs or “up-front” rebates provide funds to solar customers or developers or system owners based on the cost, size or expected production of a customer’s solar energy system. Performance-based incentives provide cash payments to solar customers or a system owner based on the energy generated by the solar energy system during a pre-determined period.

Many states also have adopted procurement requirements for renewable energy production. Twenty-nine states, the District of Columbia and three U.S. territories have adopted a renewable portfolio standard that requires regulated utilities to procure a specified percentage of total electricity delivered to customers in the state from eligible renewable energy sources, such as solar energy systems, by a specified date. To prove compliance with such mandates, utilities usually must surrender solar renewable energy certificates, or SRECs, to the applicable authority. Solar energy system owners such as our investment funds often are able to sell SRECs to utilities directly or in SREC markets.

Workforce

As of December 31, 2018, we had a total workforce of 2,542, which does not include direct sellers. None of our service providers are represented by a labor union, and we consider relations with our employees to be good.

Item 1A. Risk Factors

You should carefully consider the following risk factors, together with all of the other information included in this report, including the section of this report captioned “Management’s Discussion and Analysis of Financial Condition and Results of Operations” and our financial statements and related notes. If any of the following risks occurred, they could materially adversely affect our business, financial condition or operating results. This report also contains forward-looking statements that involve risks and uncertainties. Our actual results could differ materially from those anticipated in the forward-looking statements as a result of factors that are described below and elsewhere in this report.

Risk Related to Our Business

We need to enter into substantial additional financing arrangements to facilitate new customers’ access to our solar energy systems and provide working capital, and if financing is not available to us on acceptable terms when needed, our ability to continue to grow our business would be materially adversely impacted.

Our future success depends on our ability to raise capital from third-party investors and commercial sources, such as banks and other lenders, on competitive terms to help finance the deployment of our solar energy systems. We seek to minimize our cost of capital in order to maintain the price competitiveness of our solar energy systems. We rely on investment funds in order to provide solar energy systems with little to no upfront costs to our customers under our PPAs and Solar Leases. We also rely on access to capital, including through indebtedness in the form of debt facilities and asset-backed securities, to cover the costs of our solar energy systems that are sold outright until the systems are paid for by our customers, whether by cash or through third-party financing arrangements. Certain of our financing arrangements are with fund investors who require particular tax and other benefits. The availability of this tax-advantaged financing depends upon many factors, including:

- our ability to compete with other renewable energy companies for the limited number of potential investment fund investors, each of which has limited funds and limited appetite for the tax benefits associated with these financings;
- the state of financial and credit markets;
- changes in the legal or tax risks associated with these financings; and
- non-renewal of certain incentives or decreases in the associated benefits.

Moreover, potential investors seeking such tax-advantaged financing must remain satisfied that the structures we offer qualify for the tax benefits associated with solar energy systems available to these investors, which depends both on the investors’ assessment of tax law and the absence of any unfavorable interpretations of that law. Changes in existing law and interpretations by the Internal Revenue Service, or IRS, and the courts could reduce the willingness of fund investors to invest in funds associated with these solar energy system investments or cause these investors to require a larger allocation of customer payments. We are not certain that this type of financing will continue to be available to us. If we are unable to establish new financing when needed, or upon desirable terms, to enable our customers’ access to our solar energy systems, we may be unable to finance installation of our customers’ systems, our cost of capital could increase or our liquidity could be constrained, any of which would have a material adverse effect on our business, financial condition, results of operations and prospects. As of February 28, 2019, we had raised 25 investment funds to which investors such as banks and other large financial investors have committed to invest approximately \$1.9 billion. The undrawn committed capital for these funds as of February 28, 2019 was approximately \$176 million, which we estimate will fund approximately 86 megawatts of future deployments.

The contract terms in certain of our investment fund documents impose conditions on our ability to draw on financing commitments from the fund investors, including if an event occurs that could reasonably be expected to have a material adverse effect on the fund or on us. The terms and conditions of our investment funds can vary and may require us to alter our products, services or product mix. If we do not satisfy such conditions due to events related to our business or a specific investment fund or developments in our industry or otherwise, and as a result we are unable to draw on existing commitments, our inability to draw on such commitments could have a material adverse effect on our business, liquidity, financial condition and prospects. In addition to our inability to draw on the investors’ commitments, we have in the past incurred and may in the future incur financial penalties for non-performance, including delays in the installation process and interconnection to the power grid of solar energy systems and other factors. Based on the terms of the investment fund agreements, we will either reimburse a portion of the fund investor’s capital or pay the fund investor a non-performance fee.

To meet the capital needs of our growing business, we will need to obtain additional financing from new investors and financial institutions and investors and financial institutions who are current investors or with whom we currently have financing arrangements. If any of the investors or financial institutions that currently provide financing decide not to invest in us in the future due to general market conditions, concerns about our business or prospects or any other reason, or decide to invest at levels that are inadequate to support our anticipated needs or materially change the terms under which they are willing to provide future financing, we will need to identify new investors and financial institutions to provide financing and negotiate new financing terms. In addition, our ability to obtain additional financing through the asset-backed securities market or other secured debt markets is subject to our having sufficient assets eligible for securitization as well as our ability to obtain appropriate credit ratings. If we are unable to raise additional capital in a timely manner, our ability to meet our capital needs and fund future growth may be limited.

In the past, we have sometimes been unable to timely establish investment funds in accordance with our plans, due in part to the relatively limited number of investors attracted to such types of funds, competition for such capital and the complexity associated with negotiating the agreements with respect to such funds. Delays in raising financing could cause us to delay expanding in existing markets or entering into new markets and hiring additional personnel. Any future delays in capital raising could similarly cause us to delay deployment of a substantial number of solar energy systems for which we have signed PPAs or Solar Leases with customers. Our future ability to obtain additional financing depends on banks' and other financing sources' continued confidence in our business model and the renewable energy industry as a whole. It could also be impacted by the liquidity needs of such financing sources themselves. We face intense competition from a variety of other companies, technologies and financing structures for such limited investment capital. If we are unable to continue to offer a competitive investment profile, we may lose access to these funds or they may only be available to us on terms that are less favorable than those received by our competitors. For example, if we experience higher customer default rates than we currently experience in our existing investment funds, it could be more difficult or costly to attract future financing. In our experience, there are a relatively small number of investors that generate sufficient profits and possess the requisite financial sophistication to benefit from and have significant demand for the tax benefits that our investment funds provide. Historically, in the distributed solar energy industry, investors have typically been large financial institutions and a few large, profitable corporations. Our ability to raise investment funds is limited by the relatively small number of such investors. Any inability to secure financing could lead us to cancel planned installations, impair our ability to accept new customers or increase our borrowing costs, any of which would have a material adverse effect on our business, financial condition, results of operations and prospects.

Our business currently depends on the availability of rebates, tax credits and other financial incentives. The expiration, elimination or reduction of these rebates, credits or incentives or our ability to monetize them could adversely impact our business.

Federal, state and local government and regulatory bodies provide for tariff structures and incentives to various parties including owners, end users, distributors, system integrators and manufacturers of solar energy systems to promote solar energy in various forms, including rebates, tax credits and other financial incentives such as system performance payments, renewable energy certificates associated with renewable energy generation, exclusion of solar energy systems from property tax assessments and net metering. We rely on these governmental and regulatory programs to finance solar energy system installations, which enables us to lower the price we charge customers for energy from, and to lease or purchase, our solar energy systems, helping to achieve customer acceptance of solar energy with those customers as an alternative to utility-provided power. However, these programs may expire on a particular date, end when the allocated funding or capacity allocations are exhausted or be reduced or terminated. These reductions or terminations often occur without warning. In addition, the financial value of certain incentives decreases over time. For example, the value of SRECs in a market tends to decrease over time as the supply of SREC-producing solar energy systems installed in that market increases. If we overestimate the future value of these incentives, it could adversely impact our financial results.

Substantially all of our solar energy systems installed to date have been eligible for ITCs as well as accelerated depreciation benefits. We have relied on, and will continue to rely on, financing structures that monetize a substantial portion of those benefits and provide financing for our solar energy systems. The federal government currently offers a 30% ITC under Section 48(a) of the Internal Revenue Code for the installation of certain solar power facilities; the 30% rate continues until December 31, 2019. By statute, the ITC is scheduled to decrease to 26% of the basis of a solar energy system for systems where construction begins in 2020, 22% for systems where construction begins in 2021 and 10% for systems where construction begins after 2021 or where the solar energy system is placed into service after 2023, and the amounts that fund investors are willing to invest could decrease or we may be required to provide a larger allocation of customer payments to the fund investors as a result of this scheduled decrease. To the extent we have a reduced ability to raise investment funds as a result of this reduction or an inability to continue to monetize such benefits in our financing arrangements, the rate of growth of installations of our residential solar energy systems and our ability to maintain such systems could be negatively impacted. In addition, future changes in existing law and interpretations by the IRS and the courts with respect to certain matters, including but not limited to, treatment of the ITC and our financing arrangements, the taxation of business entities and the deductibility of interest expense could affect the amount that fund investors are willing to invest, which could reduce our access to capital. The ITC has been a significant driver of the financing supporting the adoption of residential solar energy systems in the United States and its scheduled reduction beginning in 2020, unless modified by an intervening change in law, will significantly impact the attractiveness of solar energy to these investors and could potentially harm our business.

In addition, the Tax Cuts and Jobs Act, or TCJA, which was enacted in December 2017, contains several provisions that may significantly impact the attractiveness of tax benefits to our fund investors. The TCJA reduces the highest marginal corporate tax rate from 35% to 21%, which causes accelerated depreciation to have less value to investors and results in investors having less appetite for ITCs. In addition, the TCJA imposes a new “base erosion and anti-abuse tax”, or BEAT. The BEAT is a minimum tax applied to certain large taxpayers who make deductible payments that erode their U.S. tax base above a minimum threshold. If an investor is subject to BEAT, ITCs may be used partially, but not fully offset the BEAT, resulting in a decrease of the value of the ITCs. Thus, investors will likely discount their investments to reflect the lower corporate tax rate as well as the BEAT and may be less likely to invest in solar overall, which could potentially harm our business.

Applicable authorities may adjust or decrease incentives from time to time or include provisions for minimum domestic content requirements or other requirements to qualify for these incentives. An inability to finance solar energy systems through tax-advantaged structures, to realize or monetize depreciation benefits, to monetize or otherwise receive the benefit of rebates, tax credits, SRECs or other financial incentives, or to otherwise structure investment funds in ways that are both attractive to investors and allow us to provide desirable pricing to customers could adversely impact our results of operations and ability to compete in our industry by increasing our cost of capital, causing us to increase the prices of our energy and solar energy systems and reducing the size of our addressable market. In addition, this would adversely impact our ability to attract investment partners and to form new investment funds and our ability to offer attractive financing to prospective customers.

A material reduction in the retail price of traditional utility-generated electricity or electricity from other sources or other reduction in the cost of such electricity would harm our business, financial condition, results of operations and prospects.

We believe that many of our customers’ interest in solar energy systems is driven by a desire to pay less for their energy costs. However, distributed residential solar energy has yet to achieve broad market adoption for a number of reasons including state regulatory hurdles, utility-imposed interconnection issues for distributed electricity generation systems and unfavorable economics from the customer perspective.

A customer’s interest in a solar energy system may also be affected by the cost of electricity generated from other renewable energy sources. Decreases in the retail prices of electricity from the traditional utilities or from other renewable energy sources would harm our ability to offer competitive pricing and could harm our business. The cost of electricity from traditional utilities could decrease as a result of:

- construction of new power generation plants, including plants utilizing natural gas, nuclear, coal, renewable energy or other generation technologies;
- the construction of additional electric transmission and distribution lines;
- relief of transmission constraints that enable local centers to generate energy less expensively;
- reductions in the price of natural gas or other fuel sources;
- utility rate adjustment and customer class cost reallocation;
- energy conservation technologies and public initiatives to reduce electricity consumption;
- widespread deployment of existing or development of new or lower-cost energy storage technologies that have the ability to reduce a customer’s average cost of electricity by shifting load to off-peak times;
- changes in regulations by federal or state regulatory bodies that lower the cost of generating and transmitting electricity or otherwise reduce regulatory compliance costs for traditional utilities, or otherwise disadvantage residential solar energy providers relative to traditional utilities; and
- development of new energy generation technologies that provide less expensive energy.

A reduction in utility electricity costs would make PPAs or Solar Leases less economically attractive to customers on a monthly basis and would increase the time to breakeven for our System Sales customers. If the cost of energy available from traditional utilities were to decrease due to any of these reasons, or other reasons, we would be at a competitive disadvantage, we may be unable to attract new customers and our growth would be limited. In addition, from time to time we have increased our pricing in certain markets, which may negatively impact our competitiveness.

Electric utility industry policies and regulations may present technical, regulatory and economic barriers to the purchase and use of solar energy systems that may significantly reduce demand for electricity from our solar energy systems.

Federal, state and local government regulations and policies concerning the electric utility industry, utility rate structures, interconnection procedures, and internal policies of electric utilities, heavily influence the market for electricity generation products and services. These regulations and policies often relate to electricity pricing and the interconnection of distributed electricity generation systems to the power grid. Policies and regulations that promote renewable energy and customer-sited energy generation have been challenged by traditional utilities and questioned by those in government and others arguing for less governmental spending and involvement in the energy market. In addition, it is unclear what, if any, actions the current presidential administration in the United States, the U.S. Department of Energy, and the Federal Energy Regulatory Commission may take regarding existing regulations and policies that affect the cost competitiveness of nuclear, coal and gas electric generation, and fossil fuel mining and exploration. Changes in such policies and regulations could increase the cost or decrease the benefits of solar energy systems or reduce costs and other limitations on competing forms of generation, and adversely affect the attractiveness of our products and our results of operations, cost of capital and growth prospects.

In the United States, governments and the state public service commissions that determine utility rates continually modify these regulations and policies. These regulations and policies could result in a significant reduction in the potential demand for electricity from our solar energy systems and could deter customers from entering into contracts with us. In addition, in certain of our regions, electricity generated by solar energy systems competes most effectively with the most expensive retail rates for electricity from the power grid, rather than the less expensive average price of electricity. Modifications to the utilities' peak hour pricing policies or rate design, such as movement to a flat rate, would make our current products less competitive with the price of electricity from the power grid. Other regulatory revisions that could impact the competitiveness of our product include moving from a retail rate to a time-of-use compensation mechanism, imposition of fixed demand or grid-service charges, or limitations on whether third-party owned systems are eligible for such programs. It is possible that changes such as these could have the effect of lowering the incentive for residential customers of investor-owned utilities to reduce their purchases of electricity from their utility by supplying more of their own electricity from solar, and thereby reducing demand for our product. A shift in the timing of peak rates for utility-generated electricity to a time of day when solar energy generation is less efficient or nonexistent could make our solar energy system offerings less competitive and reduce demand for our offerings. In addition, since we are required to obtain interconnection permission for each solar energy system from the local utility, changes in a local utility's regulations, policies or interconnection processes have in the past delayed and in the future could delay or prevent the completion of our solar energy systems. This in turn has delayed and, in the future, could delay or prevent us from generating revenues from such solar energy systems or cause us to redeploy solar energy systems, adversely impacting our results of operations.

In addition, any changes to government or internal utility regulations and policies that favor electric utilities or alternative forms of energy over residential rooftop solar energy could reduce our competitiveness and cause a significant reduction in demand for our offerings or increase our costs or the prices we charge our customers. Certain jurisdictions have proposed allowing traditional utilities to assess various fees on customers purchasing energy from solar energy systems or have imposed or proposed new charges or rate structures that would disproportionately impact solar energy system customers who utilize net metering, either of which would increase the cost of energy to those customers and could reduce demand for our solar energy systems. For example, in California, investor owned utilities are allowed to impose a minimum \$10 fixed charge on the monthly bill for residential customers that elect net metering and also impose new fees for interconnection and other non-bypassable charges. Such non-bypassable charges are being authorized by other public utilities commissions outside of California. Additionally, certain utilities in Arizona have approved increased rates and charges for net metering customers, and others have proposed doing away with the state's renewable electricity standard carve-outs for distributed generation. These policy changes may negatively impact our customers and affect demand for our solar energy systems, and similar changes to net metering policies may occur in other states. It is also possible that these or other changes could be imposed on our current customers, as well as future customers. Due to the current and expected continued concentration of our solar energy systems in California, any such changes in this market would be particularly harmful to our reputation, customer relations, business, results of operations and future growth in these areas. We may be similarly adversely affected if our business becomes concentrated in other jurisdictions.

Relatedly, it is possible that the bankruptcy proceedings initiated by Pacific Gas and Electric Company on January 29, 2019 could have an adverse impact on our customers and operations in California. Any such negative impacts (e.g., resulting from new non-bypassable charges, rate changes, restructuring, etc.) could be harmful to our customer relations, business, results of operations and future growth, especially given the concentration of our solar energy systems in California.

Finally, public service commissions may impose requirements on our business associated with our interactions with potential customers. The California Public Utilities Commission and the Public Service Commission of the State of New York have each adopted orders requiring changes to certain of our business practices. Other public service commissions could follow California and New York's lead and impose requirements associated with consumer protection that could affect how we do business and acquire customers.

We rely on net metering and related policies to offer competitive pricing to our customers in all of our current markets, and changes to net metering policies may significantly reduce demand for electricity from our solar energy systems.

Our business benefits significantly from favorable net metering policies in states in which we operate. Net metering allows a homeowner to pay his or her local electric utility only for his or her power usage net of production from the solar energy system, transforming the conventional relationship between customers and traditional utilities. Homeowners receive credit for the energy that the solar installation generates in excess of that needed by the home to offset energy usage at times when the solar installation is not generating energy. In states that provide for net metering, the customer typically pays for the net energy used or receives a credit against future bills at the retail rate if more energy is produced by the solar installation than consumed. In some states and utility territories, customers are also reimbursed by the electric utility for net excess generation on a periodic basis.

In recent years, net metering programs have been subject to regulatory scrutiny and legislative proposals in some states, such as Arizona, California, Hawaii, Nevada, New Hampshire, New York, Texas and Utah. Many utilities have proposed and are proposing new and varied revisions to their net metering programs, with such proposals decided by the state public utilities commissions. These revisions include, but are not limited to, capping the numbers of customers that can elect net metering within a utility service territory, imposing new fixed charges for grid service or interconnection, reducing the retail rate value of the net metered electricity generation, and imposing consumer protection requirements on solar companies. For example, in 2016, the California Public Utilities Commission enacted changes requiring customers within the service territory of San Diego Gas and Electric, Pacific Gas and Electric Company, and Southern California Edison Company, to take service on a net metering successor tariff. Under this successor tariff, utilities are allowed to impose reasonable interconnection fees on customers and some additional charges, and customers must take service on time-of-use rates. The California Public Utilities Commission is expected to begin considering additional changes to the NEM successor tariff in 2019. Further, municipal utilities are generally not subject to the same state laws and public commission oversight as compared to investor owned utilities and may make drastic and abrupt changes. As we continue to expand into areas with municipal utilities, we may be subject to greater risk of regulatory uncertainty.

If and when net metering caps in certain jurisdictions are reached, the value of the credit that customers receive for net metering will be significantly reduced, utility rate structures will be altered, or fees will be imposed on net metering customers, and future customers may be unable to recognize the same level of cost savings associated with net metering that current customers enjoy. The absence of favorable net metering policies or of net metering entirely, or the imposition of new charges that only or disproportionately impact customers that use net metering would significantly limit customer demand for our solar energy systems and the electricity they generate, could negatively affect existing customers and lead to missed payments or defaults, and could adversely impact our business, results of operations and future growth.

Our business has benefited from the declining cost of equipment, and our financial results may be harmed if the cost of equipment increases in the future.

During previous years, the declining cost of solar panels and the raw materials necessary to manufacture them has been a key driver in the price we charge for electricity and customer adoption of solar energy systems. Despite recent increases in solar panel prices due to the tariffs imposed in February 2018, industry experts indicate, and we have seen, that solar panel and raw material prices have generally declined. However, it is possible they will not decline at the same rate as they have over the past several years or that they may increase. In addition, while the solar panel market has recently seen an increase in supply, growth in the solar industry and the resulting increase in demand for solar panels and the raw materials necessary to manufacture them may put upward pressure on prices. These resulting prices could slow our growth and cause our financial results to suffer. In addition, in the past we have purchased a substantial majority of the solar panels used in our solar energy systems from manufacturers headquartered in China; however, most of the manufacturing now takes place in other Asian countries, such as Malaysia and Vietnam. Changes in governmental support or regulation in China or the other countries where these products are manufactured could affect our ability to purchase them on competitive terms, and access to specialized technologies could be restricted.

The U.S. government has imposed duties and tariffs on solar cells and could impose additional tariffs on solar cells manufactured outside the United States or implement additional restraints on trade. In 2014 and 2015, the U.S. government imposed certain anti-dumping and countervailing duties on solar cells manufactured in China and Taiwan. On January 22, 2018, the President of the United States announced the imposition of safeguard measures for a period of four years that include (1) a 30% tariff on imports of solar cells not partially or fully assembled into other products and (2) a 30% tariff on imported solar panels. These tariffs are additive to the anti-dumping and countervailing duties imposed in 2014 and 2015. The tariff on imported solar panels will decline 5% each year in the second, third and fourth years. The safeguard measures went into effect on February 7, 2018 and apply to imports from all foreign countries, including Mexico and Canada, except certain developing countries that are members of the World Trade Organization.

On September 17, 2018, the President of the United States announced the imposition of tariffs on \$200 billion of Chinese goods. Inverters imported from China are listed as subject to the new duties. Tariffs of 10% on inverters went into effect on September 24, 2018, and the tariffs were scheduled to rise to 25% on January 1, 2019. In December 2018, the President agreed to suspend further trade action for 90 days, and in February 2019 to further suspend trade action, to continue negotiations and to leave the tariff at the 10% rate for the time being. Our various inverter suppliers are still determining how they will manage these tariffs. We are currently seeing various responses from inverter suppliers to the 10% tariff, ranging from no price increases to passing on the majority of the tariff to the purchaser through price increases. We are unsure how supplier pricing will be affected by the potential implementation of the 25% tariff. Additionally, it remains unclear whether the tariff applies to all components that accompany an inverter, or just to the inverter itself.

These combined tariffs make affected solar cells less competitively priced in the United States, and the impacted manufacturers may choose to limit the amount of solar equipment they sell into the United States. The U.S. government may also take broader actions to protect U.S. based manufacturers against imports of solar cells manufactured outside the United States, such as in Southeast Asia, Japan, Germany and South Korea.

The safeguard measures have increased, and other potential tariffs could further increase, our costs of solar panels and other system components, potentially causing a significant impact on our system costs, business and prospects. If we are required to pay higher prices, accept less favorable terms or purchase solar panels or other system components from alternative, higher-priced sources, or if supply is otherwise constrained, our costs would increase significantly, and it may be less economical for us to serve certain markets, which would adversely affect our operating results and growth prospects.

Lack of success in System Sales could negatively impact our operating results and cash flows.

System Sales allow us to expand our product offerings and to enter into additional markets, such as those that prohibit third-party ownership of distributed solar energy systems or that lack a favorable net metering policy. System Sales represented approximately 15% of total megawatts installed in the year ended December 31, 2018. Industry analysts have indicated that the number of customer-owned solar energy systems has increased significantly relative to third-party ownership in certain markets. Continued increases in the variety and availability of third-party loan financing products to consumers and outright solar energy system purchases could further facilitate this growth. If customer preferences or the residential solar energy market continue to shift toward solar energy system sales, and we are not successful in our efforts, we may lose market share, which could have an adverse effect on our business, operating results and growth prospects. To the extent we are unsuccessful in our efforts to sell solar energy systems, or to work with third parties to finance those systems for our customers, our operating cash flows would be negatively affected, and our business and growth prospects would be adversely affected.

Technical and regulatory limitations may significantly reduce our ability to sell electricity from our solar energy systems and retain employees in certain markets.

Technical and regulatory limits may curb our growth in certain key markets, which may also reduce our ability to retain employees in those markets. For example, the Federal Energy Regulatory Commission, in promulgating the first form small generator interconnection procedures, recommended limiting customer-sited intermittent generation resources, such as our solar energy systems, to a certain percentage of peak load on a given electrical feeder circuit. Similar limits have been adopted by many states as a de facto standard and could constrain our ability to market to customers in certain geographic areas where the concentration of solar installations exceeds this limit. Furthermore, in certain areas, we benefit from policies that allow for expedited or simplified procedures related to connecting solar energy systems to the power grid. If such procedures are changed or cease to be available, our ability to sell the electricity generated by solar energy systems we install may be adversely impacted. As adoption of solar distributed generation rises along with the commercial operation of utility scale solar generation in key markets such as California, the amount of solar energy being fed into the power grid will surpass the amount planned for relative to the amount of aggregate demand. Some traditional utilities claim that in less than five years, solar generation resources may reach a level capable of producing an over-generation situation, which may require some solar generation resources to be curtailed to maintain operation of the power grid. While the prospect of such curtailment is somewhat speculative, particularly in the residential sector, the adverse effects of such curtailment without compensation could adversely impact our business, results of operations and future growth.

We have incurred operating losses before income taxes and may be unable to achieve or sustain profitability in the future.

We have incurred operating losses before income taxes since our inception. We incurred losses before income taxes of \$173.3 million and \$148.9 million for the years ended December 31, 2018 and 2017. We expect to continue to incur losses before income taxes from operations as we finance our operations, expand our installation, engineering, administrative, sales and marketing staffs, and implement internal systems and infrastructure to support financing the installation of new solar energy systems. Our ability to achieve profitability depends on a number of factors, including:

- growing our customer base;
- finding investors willing to invest in our investment funds;
- maintaining and further lowering our cost of capital;
- reducing the time between system installation and interconnection to the power grid, which allows us to begin generating revenue;
- reducing the cost of components for our solar energy systems;
- maximizing the benefits of rebates, tax credits, SRECs and other available incentives; and
- reducing our operating costs by optimizing our sales, design and installation processes and supply chain logistics.

Even if we do achieve profitability, we may be unable to sustain or increase our profitability in the future.

The majority of our business is conducted using one channel, direct-selling.

Historically, our primary sales channel has been a direct sales model. We also sell to customers through our inside sales team but continue to find greatest success using our direct sales channel. In addition, we have entered into sales dealer agreements with Vivint and others. We may sell through additional distribution channels in the future, including homebuilders and retailers. We compete against companies with experience selling solar energy systems to customers through a number of distribution channels, including homebuilders, home improvement stores, large construction, electrical and roofing companies, the internet and other third parties and companies that access customers through relationships with third parties in addition to other direct-selling companies. Our less diversified distribution channels may place us at a disadvantage with consumers who prefer to purchase products through these other distribution channels. If customers demonstrate a preference for other distribution channels, we may need to reduce our direct-selling efforts. We are also vulnerable to changes in laws related to direct sales and marketing that could impose additional limitations on unsolicited residential sales calls and may impose additional restrictions such as adjustments to our marketing materials and direct-selling processes, and new training for personnel. If additional laws affecting direct sales and marketing are passed in the markets in which we operate, it would take time to train our sales force to comply with such laws, and we may be exposed to fines or other penalties for violations of such laws. If we fail to compete effectively through our direct-selling efforts or are not successful in developing other sales channels, our financial condition, results of operations and growth prospects could be adversely affected.

We are highly dependent on our ability to attract, train and retain an effective sales force.

The success of our direct-selling channel efforts depends upon the recruitment, retention and motivation of a large number of sales personnel to compensate for a high turnover rate among sales personnel, which is a common characteristic of a direct-selling business. In order to grow our business, we need to recruit, train and retain sales personnel on a continuing basis. Sales personnel are attracted to direct-selling by competitive earnings opportunities, and direct-sellers typically compete for sales personnel by providing a more competitive earnings opportunity than that offered by the competition. We believe competitors devote substantial effort to determining the effectiveness of such incentives so that they can invest in incentives that are the most cost effective or produce the best return on investment. We have historically compensated our sales personnel on a commission basis, based on the size of the solar energy systems they sell and recently have begun compensating based on system size, contract rate and the expected number of hours the rooftop will be exposed to full sunlight. Some sales personnel may prefer a compensation structure that also includes a salary and equity incentive component. There is significant competition for sales talent in our industry, and from time to time we may need to adjust our compensation model to include such components. These adjustments have caused our customer acquisition costs to increase and could otherwise adversely impact our operating results and financial performance.

In addition to our sales compensation model, our ability to recruit, train and retain effective sales personnel could be harmed by additional factors, including:

- any adverse publicity regarding us, our solar energy systems, our distribution channel or our industry;
- lack of interest in, or the technical failure of, our solar energy systems;
- lack of a compelling product or income opportunity that generates interest for potential new sales personnel, or perception that other product or income opportunities are more attractive;
- any negative public perception of our sales personnel and direct-selling businesses in general;
- any regulatory actions or charges against us or others in our industry;
- general economic and business conditions; and
- potential saturation or maturity levels in a given market which could negatively impact our ability to attract and retain sales personnel in such market.

We are subject to significant competition for the recruitment of sales personnel from other direct-selling companies and from other companies that sell solar energy systems in particular. Regional and district managers of our sales personnel are instrumental in recruiting, retaining and motivating our sales personnel. When managers have elected to leave us and join other companies, the sales personnel they supervise have often left with them. We may experience increased attrition in our sales personnel in the future, which may impact our results of operations and growth. The impact of such attrition could be particularly acute in those jurisdictions, such as California, where contractual non-competition agreements for service providers are not enforceable or are subject to significant limitations.

It is therefore continually necessary to innovate and enhance our direct-selling and service model as well as to recruit and retain new sales personnel. If we are unable to do so, our business could be adversely affected.

We are not currently regulated as an electric utility under applicable law in the jurisdictions in which we operate (other than New York), but we may be subject to regulation as an electric utility in the future.

Except as described below with respect to New York, we are not regulated as a public utility in any of the markets in which we currently operate. As a result, we are not subject to the various federal, state and local standards, restrictions and regulatory requirements applicable to traditional utilities that operate transmission and distribution systems and that have an obligation to serve electric customers within a specified jurisdiction.

In October 2017, the Public Service Commission of the State of New York entered an order determining that residential rooftop solar energy providers are “electric corporations” (the term for electric utilities under New York state law) and requiring changes that will affect certain aspects of our business. The order, which is part of a broader proceeding before the Commission associated with regulating and overseeing distributed energy resource suppliers, is premised on the Commission’s determination that it has the jurisdiction to oversee our business, and businesses like ours, in the same way that it oversees public utilities. Though New York’s Public Service Commission is, to our knowledge, the first state public commission to take the position that residential rooftop solar energy providers are subject to the same regulatory oversight as electric utilities, we understand from SEIA that other public service commissions are following what is happening in New York and may take similar action depending on the outcome. If we were subject to the jurisdiction of public service commissions in the same or a similar way as public utilities, those commissions could take action that could materially affect our business operations.

Any additional federal, state, or local regulations that cause us to be treated as an electric utility, or to otherwise be subject to a similar regulatory regime of commission-approved operating tariffs, rate limitations, and related mandatory provisions, could place significant restrictions on our ability to operate our business and execute our business plan by prohibiting, restricting or otherwise regulating our sale of electricity. If we were subject to the same state or federal regulatory authorities as electric utilities in the United States or if new regulatory bodies were established to oversee our business in the United States, then our operating costs would materially increase.

Our business depends in part on the regulatory treatment of third-party owned solar energy systems.

Retail sales of electricity by non-utilities such as us face regulatory hurdles in some states and jurisdictions, including states and jurisdictions that we intend to enter, where the laws and regulatory policies have not historically embraced competition to the service provided by the incumbent, vertically integrated electric utility. Some of the principal challenges pertain to whether non-customer owned systems qualify for the same levels of rebates or other non-tax incentives available for customer-owned solar energy systems, whether third-party owned systems are eligible at all for these incentives and whether third-party owned systems are eligible for net metering and the associated cost savings. Furthermore, in some states and utility territories third parties are limited in the way that they may deliver solar to their customers. In jurisdictions such as Arizona, South Carolina, Utah and Los Angeles, California, laws have been interpreted to either prohibit the sale of electricity pursuant to our standard PPA or regulate entities making such sales, and in some cases, such laws have led residential solar energy system providers to use leases in lieu of PPAs. In other states, neither leases nor PPAs are permissible or commercially feasible. Changes in law and reductions in, or eliminations of or additional application requirements for, these benefits could reduce demand for our systems, adversely impact our access to capital and could cause us to increase the price we charge our customers for energy.

If the IRS or the U.S. Treasury Department makes a determination that the fair market value of our solar energy systems is materially lower than what we have reported in our fund tax returns, we may have to pay significant amounts to our investment funds, our fund investors and/or the U.S. government. Such determinations could have a material adverse effect on our business, financial condition and prospects.

We report in our fund tax returns that we and our fund investors claim the ITC based on the fair market value of our solar energy systems. The IRS continues to audit the fair market value determinations industry-wide. The IRS is conducting an audit of one of our investment funds. We are not aware of any other audits or results of audits related to our appraisals or fair market value determinations of any of our investment funds. If as part of an examination the IRS were to review the fair market value that we used to establish our basis for claiming ITCs and determine that the ITCs previously claimed should be reduced, we would owe certain of our investment funds or our fund investors an amount equal to 30% of the investor's share of the difference between the fair market value used to establish our basis for claiming ITCs and the adjusted fair market value determined by the IRS, plus any costs and expenses associated with a challenge to that fair market value, plus a gross up to pay for additional taxes. We could also be subject to tax liabilities, including interest and penalties, based on our share of claimed ITCs. To date, we have not been required to make such payments under any of our investment funds.

Rising interest rates could adversely impact our business.

Rising interest rates could have an adverse impact on our business by increasing our cost of capital. The majority of our cash flows to date have been from customer contracts that have been partially monetized under various investment fund structures. One of the components of this monetization is the present value of the payment streams from the customers who enter into these contracts. If the rate of return required by the fund investor rises as a result of a rise in interest rates, the present value of the customer payment stream and the total value that we are able to derive from monetizing the payment stream will each be reduced. Interest rates are at relatively low levels. It is likely that interest rates will continue to rise in the future, which would cause our costs of capital to increase.

Our investment funds contain arrangements that provide for priority distributions to fund investors until they receive their targeted rates of return. In addition, under the terms of certain of our investment funds, we may be required to make payments to the fund investors if certain tax benefits that are allocated to such fund investors are not realized as expected. Our financial condition may be adversely impacted if a fund is required to make these priority distributions for a longer period than anticipated to achieve the fund investors' targeted rates of return or if we are required to make any tax-related payments.

Our investment funds contain terms that contractually require the investment funds to make priority distributions to the fund investor, to the extent cash is available, until it achieves its targeted rate of return. The amounts of potential future distributions under these arrangements depends on the amounts and timing of receipt of cash flows into the investment fund, almost all of which is generated from customer payments related to solar energy systems that have been previously purchased (or leased, as applicable) by such fund. If such cash flows are lower than expected, the priority distributions to the investor may continue for longer than initially anticipated.

Additionally, certain of our investment funds require that, under certain circumstances, we forego distributions from the fund that we are otherwise contractually entitled to, or make capital contributions to the fund that can be redirected to the fund investor such that it achieves the targeted return. These forgone distributions or capital contributions will generally occur if the fund investor has not achieved its targeted return prior to the target flip date of the investment fund. None of our investment funds have reached their target flip date at the current time and we anticipate that the first target flip date in which a fund investor is required to have achieved its targeted return is 2020.

Our fund investors also expect returns partially in the form of tax benefits and, to enable such returns, our investment funds contain terms that contractually require us to make payments to the funds that are then used to make payments to the fund investor in certain circumstances so that the fund investor receives value equivalent to the tax benefits it expected to receive when entering into the transaction. The amounts of potential tax payments under these arrangements depend on the tax benefits that accrue to such investors from the funds' activities and, in some cases, may be impacted by changes in tax law.

Due to uncertainties associated with estimating the timing and amounts of these cash distributions and allocations of tax benefits to such investors, we cannot determine the potential maximum future impact on our cash flows or payments that we could have to make under these arrangements. We may agree to similar terms in the future if market conditions require it. Any significant payments that we may be required to make or distributions to us that are reduced or diverted as a result of these arrangements could adversely affect our financial condition.

We may incur substantially more debt or take other actions that could restrict our ability to pursue our business strategies.

As of December 31, 2018, we and our subsidiaries had outstanding \$1.2 billion in principal amount of indebtedness, including through debt facilities and asset-backed securities issued by our subsidiaries. As of December 31, 2018 we had up to \$396.6 million of unused borrowing capacity remaining. These debt facilities restrict our ability to dispose of assets, incur indebtedness, incur liens, pay dividends or make other distributions to holders of our capital stock, repurchase our capital stock, make specified investments or engage in transactions with our affiliates. In addition, we do not have full access to the cash and cash equivalents held in our investment funds until distributed per the terms of the arrangements. We and our subsidiaries may incur substantial additional debt in the future and any debt instrument we enter into in the future may contain similar, or more onerous, restrictions. These restrictions could inhibit our ability to pursue our business strategies. Additionally, our ability to make scheduled payments depends on our operating performance, which is subject to economic, financial, competitive and other factors that may be beyond our control. Furthermore, if we default on one of our debt instruments, and such event of default is not cured or waived, the lenders could terminate commitments to lend and cause all amounts outstanding with respect to the debt to be due and payable immediately, which in turn could result in cross acceleration under other debt instruments. Our assets and cash flow may not be sufficient to fully repay borrowings under all of our outstanding debt instruments if some or all of these instruments are accelerated upon a default.

Furthermore, there is no assurance that we will be able to raise additional capital through the asset-backed securities market or other secured or unsecured debt markets or enter into new debt instruments on acceptable terms. If we are unable to satisfy financial covenants and other terms under existing or new instruments or obtain waivers or forbearance from our lenders or if we are unable to obtain refinancing or new financings for our working capital, equipment and other needs on acceptable terms if and when needed, our business would be adversely affected.

Our business is concentrated in California, putting us at risk of region-specific disruptions.

As of December 31, 2018, approximately 34% of our cumulative megawatts installed were located in California. In addition, we expect future growth to occur in California, which could further concentrate our customer base and operational infrastructure. Accordingly, our business and results of operations are particularly susceptible to adverse economic, regulatory, political, weather and other conditions in California and in other markets that may become similarly concentrated. As mentioned above, any adverse impacts to retail electric customers resulting from Pacific Gas and Electric Company's bankruptcy proceedings could affect a significant portion of our customer base in light of the concentration of our customers in California.

Residential solar energy is an evolving market, which makes it difficult to evaluate our prospects.

The residential solar energy industry is constantly evolving, which makes it difficult to evaluate our prospects. We cannot be certain if historical growth rates reflect future opportunities or whether growth anticipated by us or industry analysts will be realized. Any future growth of the residential solar energy market and the success of our solar energy systems depend on many factors beyond our control, including recognition and acceptance of the residential solar energy market by consumers, the pricing of alternative sources of energy, a favorable regulatory environment, the continuation of expected tax benefits and other incentives and our ability to provide our solar energy systems cost-effectively. If the markets for residential solar energy do not develop at the rate we expect, our business may be adversely affected.

Additionally, there is limited empirical evidence regarding the effect solar energy systems have on the resale value of customers' houses. Due to the length of our customer contracts, the system deployed on a customer's roof may be outdated prior to the expiration of the term of the customer contract reducing the likelihood of renewal of our contracts at the end of the 20-year term, and possibly increasing the occurrence of defaults. This could have an adverse effect on our business, financial condition, results of operations and cash flow. As a result, we may be unable to accurately forecast our future performance and to invest accordingly.

If we fail to maintain proper and effective internal controls, our ability to produce accurate and timely financial statements could be impaired, which could harm our operating results, our ability to operate our business and investors' views of us.

Section 404 of the Sarbanes-Oxley Act requires public companies to conduct an annual review and evaluation of their internal controls. Our failure to maintain the effectiveness of our internal controls in accordance with the requirements of the Sarbanes-Oxley Act could have a material adverse effect on our business. We could lose investor confidence in the accuracy and completeness of our financial reports, which could have an adverse effect on our stock price. In addition, if our efforts to comply with new or changed laws, regulations and standards differ from the activities intended by regulatory or governing bodies due to ambiguities related to practice, regulatory authorities may initiate legal proceedings against us and our business may be harmed.

We face competition from traditional regulated electric utilities, from less-regulated third party energy service providers, other solar companies and from new renewable energy companies.

The solar energy and renewable energy industries are both highly competitive and continually evolving as participants strive to distinguish themselves within their markets and compete with large traditional utilities. We believe that our primary competitors are the traditional utilities that supply electricity to our potential customers. Traditional utilities generally have substantially greater financial, technical, operational and other resources than we do. As a result, these competitors may be able to devote more resources to the research, development, promotion and sale of their products or respond more quickly to evolving industry standards and changes in market conditions than we can, including the ability to initiate proceedings before state public utility commissions to reduce the value of net metering. Traditional utilities could also offer other value-added products or services that could help them to compete with us even if the cost of electricity they offer is higher than ours. In addition, a majority of utilities' sources of electricity is non-solar, which may allow utilities to sell electricity more cheaply than electricity generated by our solar energy systems.

We also compete with companies that are not regulated like traditional utilities but that have access to the traditional utility electricity transmission and distribution infrastructure pursuant to state and local pro-competitive and consumer choice policies. These energy service companies are able to offer customers electricity supply-only solutions that are competitive with our solar energy system options on both price and usage of renewable energy technology while avoiding the long-term agreements and physical installations that our current fund-financed business model requires. This may limit our ability to attract new customers, particularly those who wish to avoid long-term contracts or have an aesthetic or other objection to putting solar panels on their roofs.

Additionally, we compete with solar companies with business models that are similar to ours. Some of these competitors have a higher degree of brand name recognition, differing business and pricing strategies, and greater capital resources than we have, as well as extensive knowledge of our target markets. In addition, our System Sales face increasing competition from other national and local solar energy companies who sell solar energy systems and may offer a broader suite of companion products. We believe the solar industry is becoming increasingly commoditized, and if we are unable to offer differentiated products, establish or maintain a consumer brand that resonates with homeowners or compete with the pricing offered by our competitors, our sales and market share position may be adversely affected.

In addition, we compete with solar companies in the downstream value chain of solar energy. For example, we face competition from purely finance driven organizations that acquire customers and then subcontract out the installation of solar energy systems, from installation businesses that seek financing from external parties, from large construction companies and utilities, and increasingly from sophisticated electrical and roofing companies. Some of these competitors specialize in the residential solar energy market, and some may provide energy at lower costs than we do. Additionally, some of our competitors may offer their products through sales channels that they have more fully developed, such as retail sales. Further, some of our competitors are integrating vertically in order to ensure supply and to control costs. Many of our competitors also have significant brand name recognition and have extensive knowledge of our target markets. For us to remain competitive, we must distinguish ourselves from our competitors by offering an integrated approach that successfully competes with each level of products and services offered by our competitors at various points in the value chain. If our competitors develop an integrated approach similar to ours including sales, financing, engineering, manufacturing, installation, maintenance and monitoring services, this will reduce our marketplace differentiation.

We also compete with solar companies that offer community solar products and utility companies that provide renewable power purchase programs. Some customers might choose to subscribe to a community solar project or renewable subscriber programs instead of installing a solar energy system on their home, which could affect our sales. Additionally, some utility companies (and some utility-like entities, such as community choice aggregators in California) have generation portfolios that are increasingly renewable in nature. In California, for example, due to recent legislation, utility companies and community choice aggregators in that state are required to have generation portfolios comprised of 60% renewable energy by 2030, and state regulators are planning for utility companies and community choice aggregators to sell 100% greenhouse gas free electricity to retail customers by 2045. As utility companies offer increasingly renewable portfolios to retail customers, those customers might be less inclined to install a solar energy system at their home, which could adversely affect our growth.

As the solar industry grows and evolves, we will also face new competitors who are not currently in the market. Our industry is characterized by low technological barriers to entry and well-capitalized companies could choose to enter the market and compete with us. Our failure to adapt to changing market conditions and to compete successfully with existing or new competitors will limit our growth and will have a material adverse effect on our business and prospects.

Developments in alternative technologies or improvements in distributed solar energy generation may materially adversely affect demand for our offerings.

Significant developments in alternative technologies, such as advances in other forms of distributed solar power generation, storage solutions such as batteries, the widespread use or adoption of fuel cells for residential or commercial properties or improvements in other forms of centralized power production may materially and adversely affect our business and prospects in ways we do not currently anticipate. Any failure by us to adopt new or enhanced technologies or processes, or to react to changes in existing technologies, could materially delay deployment of our solar energy systems, which could result in product obsolescence, the loss of competitiveness of our systems, decreased revenue and a loss of market share to competitors.

A failure to hire and retain a sufficient number of employees in key functions would constrain our ability to timely complete our customers' projects.

To support our business, we need to hire, train, deploy, manage and retain a substantial number of skilled installers and electricians in the markets where there is heightened or increasing demand for solar energy products. Competition for qualified personnel in our industry has increased substantially, and we expect it to continue to do so, particularly for skilled electricians and other personnel involved in the installation of solar energy systems. We also compete with the homebuilding and construction industries for skilled labor. As these industries seek to hire additional workers, our cost of labor may increase. Companies with whom we compete to hire installers may offer compensation or incentive plans that certain installers may view as more favorable. We periodically assess the compensation plans and policies for our service providers, including our installers and electricians, and, if deemed necessary, may decide to revise those plans and policies. Our installers and electricians may not react well to any such revisions, which in turn could adversely affect retention, motivation and productivity. Additionally, we continually monitor our workforce requirements in the markets in which we operate. Any workforce reductions in markets where sales volume does not support the number of installation and other personnel could in turn adversely affect retention, motivation and productivity. We may also subcontract certain aspects of the installation process to independent contractors. Training these independent contractors and monitoring them for compliance with our policies may require significant management oversight and may present additional risks and challenges compared to those related to managing our employees.

Furthermore, trained installers are typically able to more efficiently install solar energy systems. Shortages of skilled labor could significantly delay installations or otherwise increase our costs. While we do not currently have any unionized employees, we have expanded, and may continue to expand, into areas such as the Northeast, where labor unions are more prevalent. The unionization of our labor force could also increase our labor costs. In addition, a significant portion of our business has been concentrated in states such as California, where market conditions are particularly favorable to distributed solar energy generation. We have experienced and may in the future experience greater than expected turnover in our installers in those jurisdictions which would adversely impact the geographic mix of new solar energy system installations.

Because we are a licensed electrical contractor in every jurisdiction in which we operate, we are required to employ licensed electricians. As we expand into new markets, we are required to hire and/or contract with seasoned licensed electricians in order for us to qualify for the requisite state and local licenses. Because of the high demand for these seasoned licensed electricians, these individuals currently or in the future may demand greater compensation. In addition, our inability to attract and retain these qualifying electricians may adversely impact our ability to continue operations in current markets or expand into new areas.

If we cannot meet our hiring, retention and efficiency goals, we may be unable to complete our customers' projects on time, in an acceptable manner or at all. Any significant failures in this regard would materially impair our growth, reputation, business and financial results. If we are required to pay higher compensation than we anticipate, these greater expenses may also adversely impact our financial results and the growth of our business.

We act as the licensed general contractor for our customers and are subject to risks associated with construction, cost overruns, delays, regulatory compliance and other contingencies, any of which could have a material adverse effect on our business and results of operations.

We are a licensed contractor in every market we service, and we are responsible for every customer installation. We are the general contractor, electrician, construction manager and installer for all our solar energy systems. We may be liable to customers for any damage we cause to their home, belongings or property during the installation of our systems, including any re-roofing services provided under our contracts. In addition, because the solar energy systems we deploy are high-voltage energy systems, we may incur liability for the failure to comply with electrical standards and manufacturer recommendations. Furthermore, prior to obtaining permission to operate our solar energy systems, the systems must pass various inspections. Any delay in passing, or inability to pass, such inspections, would adversely affect our results of operations. Because our profit on a particular installation is based in part on assumptions as to the cost of such project, damage for which we are liable, cost overruns, delays or other execution issues may cause us to not achieve our expected results or cover our costs for that project.

In addition, the installation of solar energy systems is subject to oversight and regulation in accordance with national, state and local laws and ordinances relating to building, fire and electrical codes, safety, environmental protection, utility interconnection and metering, and related matters. We also rely on certain of our employees to maintain professional licenses in many of the jurisdictions in which we operate, and our failure to employ properly licensed personnel could adversely affect our licensing status in those jurisdictions. It is difficult and costly to track the requirements of every authority having jurisdiction over our operations and our solar energy systems. Any new government regulations or utility policies pertaining to our systems, or changes to existing government regulations or utility policies pertaining to our systems, may result in significant additional expenses to us and our customers and, as a result, could cause a significant reduction in demand for our systems.

We depend on a limited number of suppliers of solar energy system components and technologies to adequately meet anticipated demand for our solar energy systems. Due to the limited number of suppliers in our industry, the acquisition of any of these suppliers by a competitor or any shortage, delay, price change, imposition of tariffs or duties or other limitation in our ability to obtain components or technologies we use could result in sales and installation delays, cancellations and loss of market share.

We purchase solar panels, inverters and other system components from a limited number of suppliers, making us susceptible to quality issues, shortages and price changes. If we fail to develop, maintain and expand our relationships with our suppliers, our ability to adequately meet anticipated demand for our solar energy systems may be adversely affected, or we may only be able to offer our systems at higher costs or after delays. If one or more of the suppliers that we rely upon to meet anticipated demand ceases or reduces production due to its financial condition, acquisition by a competitor or otherwise, is unable to increase production as industry demand increases or is otherwise unable to allocate sufficient production to us, it may be difficult to quickly identify alternative suppliers or to qualify alternative products on commercially reasonable terms, and our ability to satisfy this demand may be adversely affected. There are a limited number of suppliers of solar energy system components and technologies. While we believe there are other sources of supply for these products available, transitioning to a new supplier may result in additional costs and delays in acquiring our solar products and deploying our systems, and may require us to obtain the approval of our financing partners in order to utilize new products. These issues could harm our business or financial performance.

There have also been periods of industry-wide shortages of key components, including solar panels, in times of rapid industry growth. The manufacturing infrastructure for some of these components has a long lead-time, requires significant capital investment and relies on the continued availability of key commodity materials, potentially resulting in an inability to meet demand for these components. The solar industry is growing and, as a result, shortages of key components, including solar panels, may be more likely to occur, which in turn may result in price increases for such components. Even if industry-wide shortages do not occur, suppliers may decide to allocate key components with high demand or insufficient production capacity to more profitable customers, customers with long-term supply agreements or customers other than us and our supply of such components may be reduced as a result.

We have entered into multi-year agreements with certain of our major suppliers. These agreements are denominated in U.S. dollars. Since our revenue is also generated in U.S. dollars, we are mostly insulated from currency fluctuations. However, since our suppliers often incur a significant amount of their costs by purchasing raw materials and generating operating expenses in foreign currencies, if the value of the U.S. dollar depreciates significantly or for a prolonged period of time against these other currencies, this may cause our suppliers to raise the prices they charge us, which could harm our financial results. As noted above, the U.S. government has imposed a 30% tariff (decreasing by 5% each year for four years) on imports of solar cells not partially or fully assembled into other products and a 30% tariff (decreasing by 5% each year for four years) on imported solar panels from most foreign countries. It is unclear what further actions the current U.S. presidential administration may take with respect to existing and proposed trade agreements, or restrictions on trade generally. The existing tariffs, and any new tariffs, duties or other trade measures, or shortages, delays, price changes or other limitation in our ability to obtain components or technologies we use could limit our growth, cause cancellations or adversely affect our profitability, and result in loss of market share and damage to our brand.

Our operating results may fluctuate from quarter to quarter and year to year, which could make our future performance difficult to predict and could cause our operating results for a particular period to fall below expectations, resulting in a severe decline in the price of our common stock.

Our quarterly and annual operating results are difficult to predict and may fluctuate significantly in the future. We have experienced seasonal and quarterly fluctuations in the past. However, given that we are in a growing industry, the true extent of these fluctuations may have been masked by our historical growth rates and thus may not be readily apparent from our historical operating results and may be difficult to predict. For example, the amount of revenue we recognize in a given period depends in part on the types of customer contracts we have entered into—because revenue from System Sales is recognized when the system is placed into service whereas revenue from our PPAs and Solar Leases is recognized over the contract life, which is typically 20 years—and, in the case of PPAs and Solar Leases is dependent in part on the amount of energy generated by solar energy systems under such contracts. As a result, revenue derived from PPAs is impacted by seasonally shorter daylight hours in winter months. In addition, our ability to install solar energy systems is impacted by weather, such as during the winter months in the Northeastern United States. Such delays can impact the timing of when we can install and begin to generate revenue from solar energy systems. As such, our past quarterly operating results may not be good indicators of future performance.

In addition to the other risks described in this “Risk Factors” section, the following factors could cause our operating results to fluctuate:

- the expiration or initiation of any rebates or incentives;
- significant fluctuations in customer demand for our offerings;
- our ability to complete installations and interconnect to the power grid in a timely manner;
- the availability and costs of suitable financing;
- the amount and timing of sales of SRECs;
- our ability to continue to expand our operations, and the amount and timing of expenditures related to this expansion;
- actual or anticipated changes in our growth rate relative to our competitors;
- announcements by us or our competitors of significant acquisitions, strategic partnerships, joint ventures or capital-raising activities or commitments;
- changes in our pricing policies or terms or those of our competitors, including traditional utilities; and
- actual or anticipated developments in our competitors’ businesses or the competitive landscape.

For these or other reasons, the results of any prior quarterly or annual periods should not be relied upon as indications of our future performance. In addition, our actual revenue, key operating metrics and other operating results in future periods may fall short of the expectations of investors and financial analysts, which could have an adverse effect on the trading price of our common stock.

The profitability and residual value of our solar energy systems during and at the end of the associated term of the PPA or Solar Lease may be lower than projected today and adversely affect our financial performance and valuation.

We maintain ownership of the solar energy systems that we install under our PPAs or Solar Leases. We amortize the costs of our solar energy systems over a 30-year estimated useful life, which exceeds the period of the component warranties and the corresponding payment streams from our contracts with our customers. If we incur repair and maintenance costs on these systems after the warranties have expired, and if they then fail or malfunction, we will be liable for the expense of repairing these systems without a chance of recovery from our suppliers. We are also contractually obligated to remove, store and reinstall the solar energy systems, typically for a nominal fee, if customers need to replace or repair their roofs. However, customer fees may not cover our costs to remove, store and reinstall the solar energy systems. In addition, we typically bear the cost of removing the solar energy systems at the end of the term of the customer contract if the customer does not renew his or her contract or purchase the system. Furthermore, it is difficult to predict how future environmental regulations may affect the costs associated with the removal, disposal or recycling of our solar energy systems. We also face other factors that could increase the costs or diminish the production of a solar energy system, such as unanticipated damage or malfunctions, animal interference and weather-related matters. If the residual value of the systems is less than we expect at the end of the customer contract, after giving effect to any associated removal and redeployment costs, we may be required to accelerate all or some of the remaining unamortized costs. If the profitability or the residual value of the systems is lower than expected, this could materially impair our future operating results and estimated retained value.

Compliance with occupational safety and health requirements and best practices can be costly , and noncompliance with such requirements may result in potentially significant monetary penalties, operational delays and adverse publicity.

The installation of solar energy systems requires our employees to work at heights with complicated and potentially dangerous electrical systems and at potentially high temperatures. The evaluation and modification of buildings as part of the installation process requires our employees to work in locations that may contain potentially dangerous levels of asbestos, lead, mold or other materials known or believed to be hazardous to human health. We also maintain a fleet of over 700 trucks and other vehicles to support our installers and operations. There is substantial risk of serious injury or death if proper safety procedures are not followed. Our operations are subject to regulation under OSHA, DOT, and equivalent state laws. Changes to OSHA, DOT or state requirements, or stricter interpretation or enforcement of existing laws or regulations, could result in increased costs. If we fail to comply with applicable OSHA regulations, even if no work-related serious injury or death occurs, we may be subject to civil or criminal enforcement and be required to pay substantial penalties, incur significant capital expenditures or suspend or limit operations. We could be exposed to increased liability in the future. In the past, we have had workplace accidents and received citations from OSHA regulators for alleged safety violations, resulting in fines. Any such accidents, citations, violations, injuries or failure to comply with industry best practices may subject us to adverse publicity, damage our reputation and competitive position and adversely affect our business or financial performance.

Problems with product quality or performance may cause us to incur expenses, may lower the residual value of our solar energy systems and may damage our market reputation and adversely affect our financial results.

We agree to maintain the solar energy systems installed on our customers' homes in connection with a PPA or Solar Lease during the length of the term of our customer contracts, which is typically 20 years. We are exposed to any liabilities arising from the systems' failure to operate properly and are generally under an obligation to ensure that each system remains in good condition during the term of the agreement. We also agree to provide a workmanship warranty and maintain the solar energy systems we sell to customers for a period of one to ten years. As part of our operations and maintenance work, we provide a pass-through of the inverter and panel manufacturers' warranty coverage to our System Sales customers, which generally range from ten to 20 years. We also take advantage of manufacturers' warranty coverage when maintaining solar energy systems installed under PPAs and Solar Leases. One or more of these third-party manufacturers could cease operations and no longer honor these warranties, leaving us to fulfill these potential obligations to our customers or to our fund investors without underlying warranty coverage. We, either ourselves or through our investment funds, bear the cost of such major equipment. Even if the investment fund bears the direct expense of such replacement equipment, we could suffer financial losses associated with a loss of production from the solar energy systems.

To be competitive in the market and to comply with the requirements of our jurisdictions, our Solar Leases contain a performance guarantee in favor of the lessee. Solar Leases with performance guarantees require us to refund certain payments to the lessee if the solar energy system fails to generate a stated minimum amount of electricity in a 12-month period. We may also suffer financial losses associated with such refunds if significant performance guarantee payments are triggered.

Our failure to accurately predict future liabilities related to material quality or performance expenses could result in unexpected volatility in our financial condition. Because of the long estimated useful life of our solar energy systems, we have been required to make assumptions and apply judgments regarding a number of factors, including our anticipated rate of warranty claims, and the durability, performance and reliability of our solar energy systems. We have made these assumptions based on the historic performance of similar systems or on accelerated life cycle testing. Our assumptions could prove to be materially different from the actual performance of our systems, causing us to incur substantial expense to repair or replace defective solar energy systems in the future or to compensate customers for systems that do not meet their performance guarantees. Equipment defects, serial defects or operational deficiencies also would reduce our revenue from customer contracts because the customer payments under such agreements are dependent on system production or would require us to make refunds under performance guarantees. Any widespread product failures or operating deficiencies may damage our market reputation and adversely impact our financial results.

We are responsible for providing maintenance, repair and billing on solar energy systems that are owned or leased by our investment funds on a fixed fee basis, and our financial performance could be adversely affected if our cost of providing such services is higher than we project.

We typically provide a workmanship warranty for periods of five to 20 years to our investment funds for every system we sell to them. We are also generally contractually obligated to cover the cost of maintenance, repair and billing on any solar energy systems that we sell or lease to our investment funds. We are subject to a maintenance services agreement under which we are required to operate and maintain the system and perform customer billing services for a fixed fee that is calculated to cover our future expected maintenance and servicing costs of the solar energy systems in each investment fund over the term of the PPA or Solar Lease with the covered customers. If our solar energy systems require an above-average number of repairs or if the cost of repairing systems were higher than our estimate, we would need to perform such repairs without additional compensation. If our solar energy systems are damaged in the event of a natural disaster beyond our control, such as an earthquake, tornado, wildfire, tsunami or hurricane, losses could be outside the scope of insurance policies or exceed insurance policy limits, and we could incur unforeseen costs that could harm our business and financial condition. We may also incur significant costs for taking other actions in preparation for, or in reaction to, such events. When required to do so under the terms of a particular investment fund, we purchase property and business interruption insurance or other insurance policies with industry standard coverage and limits approved by the investor's third-party insurance advisors to hedge against risk, but such coverage may not cover our losses, and we have not acquired such coverage for all of our funds.

Product liability claims against us or accidents could result in adverse publicity and potentially significant monetary damages.

If our solar energy systems or other products were to injure someone, we could be exposed to product liability claims. In addition, it is possible that our products could cause property damage as a result of product malfunctions, defects, improper installation, fire or other causes. We rely on our general liability insurance to cover product liability claims. Any product liability claims we face could be expensive to defend and divert management's attention. The successful assertion of product liability claims against us could result in potentially significant monetary damages, penalties or fines, increase our insurance rates, subject us to adverse publicity, damage our reputation and competitive position and adversely affect sales of our systems and other products. In addition, product liability claims, injuries, defects or other problems experienced by other companies in the residential solar industry could lead to unfavorable market conditions to the industry as a whole and may have an adverse effect on our ability to attract new customers, thus affecting our growth and financial performance.

Failure by our component suppliers to use ethical business practices and comply with applicable laws and regulations may adversely affect our business.

We do not control our suppliers or their business practices. Accordingly, we cannot guarantee that they follow ethical business practices such as fair wage practices and compliance with environmental, safety and other local laws. A lack of demonstrated compliance could lead us to seek alternative suppliers, which could increase our costs and result in delayed delivery of our products, product shortages or other disruptions of our operations. Violation of labor or other laws by our suppliers or the divergence of a supplier's labor or other practices from those generally accepted as ethical in the United States or other markets in which we do business could also attract negative publicity for us and harm our business.

Damage to our brand and reputation, or change or loss of use of our brand, could harm our business and results of operations.

We depend significantly on our reputation for high-quality products, best-in-class customer service and the brand name "Vivint Solar" to attract new customers and grow our business. If we fail to continue to deliver our solar energy systems within the planned timelines, if our offerings do not perform as anticipated or if we damage any of our customers' properties or delay or cancel projects, our brand and reputation could be significantly impaired. Future technical improvements may allow us to offer lower prices or offer new technology to new customers; however, technical limitations in our current solar energy systems may prevent us from offering such lower prices or new technology to our existing customers. The inability of our current customers to benefit from technological improvements could cause our existing customers to lower the value they perceive our existing products offer and impair our brand and reputation.

We have focused particular attention on growing our direct sales force, leading us in some instances to take on candidates who we later determined did not meet our standards. In addition, given our direct sales business model and the sheer number of interactions our sales and other personnel have with customers and potential customers, it is inevitable that some customers' and potential customers' interactions with our company will be perceived as less than satisfactory. This has led to instances of customer complaints, some of which have affected our digital footprint on rating websites and social media platforms. If we cannot manage our hiring and training processes to avoid or minimize these issues to the extent possible, our reputation may be harmed and our ability to attract new customers would suffer.

Given our relationship with our sister company Vivint and the similarity in our names, customers may associate us with any problems experienced with Vivint, such as complaints with the Better Business Bureau. Because we have no control over Vivint, we cannot take remedial action to cure any issues Vivint has with its customers, and our brand and reputation may be harmed if we are mistaken for the same company.

In addition, if we were to no longer use, lose the right to continue to use, or if others use, the “Vivint Solar” brand, we could lose recognition in the marketplace among customers, suppliers and partners, which could affect our growth and financial performance, and would require financial and other investment, and management attention in new branding, which may not be as successful.

Marketplace confidence in our liquidity and long-term business prospects is important for building and maintaining our business.

Our financial condition, operating results and business prospects may suffer materially if we are unable to establish and maintain confidence about our liquidity and business prospects among consumers and within our industry. Our solar energy systems require ongoing maintenance and support. If we were to reduce operations now or in the future, existing buyers of our systems might have difficulty in having us repair or service our systems, which remain our responsibility under the terms of our customer contracts. As a result, consumers may be less likely to purchase our solar energy systems now if they are uncertain that our business will succeed or that our operations will continue for many years. Similarly, suppliers and other third parties will be less likely to invest time and resources in developing business relationships with us if they are not convinced that our business will succeed. Accordingly, in order to build and maintain our business, we must maintain confidence among customers, suppliers and other parties in our liquidity and long-term business prospects. We may not succeed in our efforts to build this confidence.

If we fail to manage our recent and future operations and growth effectively, we may be unable to execute our business plan, maintain high levels of customer service or adequately address competitive challenges.

We have experienced growth in recent periods with the cumulative capacity of our solar energy systems growing from 864.9 megawatts as of December 31, 2017 to 1,060.9 megawatts as of December 31, 2018, and we intend to continue to expand our business within existing markets and in a number of new locations in the future. This growth has placed, and any future growth may place, a strain on our management, operational and financial infrastructure. Our operations, growth and expansion require significant time and effort on the part of our management team as it is required to maintain and expand our relationships with customers, suppliers and other third parties and attract new customers, suppliers and financing, as well as manage multiple geographic locations.

In addition, our current and planned operations, personnel, information technology and other systems and procedures might be inadequate to support our future growth and may require us to make additional unanticipated investments in our infrastructure. Our success and ability to further scale our business will depend, in part, on our ability to manage these changes in a cost-effective and efficient manner.

If we cannot manage our operations and growth, we may be unable to meet our or industry analysts’ expectations regarding growth, opportunity and financial targets, take advantage of market opportunities, execute our business strategies, meet our investment fund commitments or respond to competitive pressures. This could also result in declines in quality or customer satisfaction, increased costs, difficulties in introducing new offerings or other operational difficulties. Any failure to effectively manage our operations and growth could adversely impact our business and reputation.

Expansion into new markets could be costly and time-consuming. Historically, we have only provided our offerings to residential customers, which could put us at a disadvantage relative to companies who also compete in other markets.

We have historically only provided our offerings to residential customers. We compete with companies who sell solar energy systems in the commercial, industrial and government markets, in addition to the residential market. While we believe that in the future we could have opportunities to expand our operations into other markets, there are no assurances that our design and installation systems will work for non-residential customers or that we will be able to compete successfully with companies with historical presences in such markets or we may not realize the anticipated benefits of entering such markets, and entering new markets has numerous risks, including the following:

- incurring significant costs if we are required to adapt our current or develop new design and installation processes for use in non-residential applications;
- diversion of our management and employees from our core residential business;
- difficulty adapting our current or developing new marketing strategies and sales channels to non-residential customers;
- inability to obtain key customers, brand recognition and market share and compete successfully with companies with historical presences in such markets; and
- inability to achieve the financial and strategic goals for such market.

If we choose to pursue opportunities in additional markets, including batteries or electric vehicle charging stations, and are unable to successfully compete in such markets, our operating results and growth prospects could be materially adversely affected. Additionally, there is intense competition in the residential solar energy market in the markets in which we operate. As new entrants continue to enter into these markets, we may be unable to gain or maintain market share and we may be unable to compete with companies that earn revenue in both the residential market and non-residential markets.

We may not realize the anticipated benefits of past or future acquisitions, and integration of these acquisitions may disrupt our business and management.

In the future we may acquire companies, project pipelines, products or technologies or enter into joint ventures or other strategic initiatives. We may not realize the anticipated benefits of any future acquisition, and any acquisition has numerous risks. These risks include the following:

- difficulty in assimilating the operations and personnel of the acquired company;
- difficulty in effectively integrating the acquired technologies or products with our current technologies;
- difficulty in maintaining controls, procedures and policies during the transition and integration;
- disruption of our ongoing business and distraction of our management and employees from other opportunities and challenges due to integration issues;
- difficulty integrating the acquired company's accounting, management information and other administrative systems;
- inability to retain key technical and managerial personnel of the acquired business;
- inability to retain key customers, vendors and other business partners of the acquired business;
- inability to achieve the financial and strategic goals for the acquired and combined businesses;
- incurring acquisition-related costs or amortization costs for acquired intangible assets that could impact our operating results;
- potential failure of the due diligence processes to identify significant issues with product quality, intellectual property infringement and other legal and financial liabilities, among other things;
- potential inability to assert that internal controls over financial reporting are effective; and
- potential inability to obtain, or obtain in a timely manner, approvals from governmental authorities, which could delay or prevent such acquisitions.

Mergers and acquisitions of companies are inherently risky, and if we do not complete the integration of acquired businesses successfully and in a timely manner, we may not realize the anticipated benefits of the acquisitions to the extent anticipated, which could adversely affect our business, financial condition or results of operations.

The loss of one or more members of our senior management or key employees may adversely affect our ability to implement our strategy.

We are highly dependent on the efforts and abilities of the principal members of our senior management team, and the loss of one or more key executives could have a negative impact on our business.

We also depend on our ability to retain and motivate key employees and attract qualified new employees. None of our key executives are bound by employment agreements for any specific term, and we do not maintain key person life insurance policies on any of our executive officers. Our compensation structure, which includes salary, bonus, equity and benefits components, is important to our ability to attract, retain and motivate our employees. If we do not provide adequate compensation, or appropriately structure our equity grants, we may be unable to maintain our current workforce or attract new talent in the future, and we may be unable to replace key members of our management team and key employees if we lose their services. Integrating new employees into our team could prove disruptive to our operations, require substantial resources and management attention and ultimately prove unsuccessful. An inability to attract and retain sufficient managerial personnel who have critical industry experience and relationships could limit or delay our strategic efforts, which could have a material adverse effect on our business, financial condition, results of operations and prospects.

We may be subject to intellectual property rights claims by third parties, which are extremely costly to defend, could require us to pay significant damages and could limit our ability to use certain technologies.

Third parties, including our competitors, may own patents or other intellectual property rights that cover aspects of our technology or business methods. Such parties may claim we have misappropriated, misused, violated or infringed third party intellectual property rights, and, if we gain greater recognition in the market, we face a higher risk of being the subject of claims that we have violated others' intellectual property rights. Any claim that we violate a third party's intellectual property rights, whether with or without merit, could be time-consuming, expensive to settle or litigate and could divert our management's attention and other resources. If we do not successfully settle or defend an intellectual property claim, we could be liable for significant monetary damages and could be prohibited from continuing to use certain technology, business methods, content or brands. To avoid a prohibition, we could seek a license from third parties, which could require us to pay significant royalties, increasing our operating expenses. If a license is not available at all or not available on reasonable terms, we may be required to develop or license a non-violating alternative, either of which could require significant effort and expense. If we cannot license or develop a non-violating alternative, we would be forced to limit or stop sales of our offerings and may be unable to effectively compete. Any of these results would adversely affect our business, results of operations, financial condition and cash flows. To deter other companies from making intellectual property claims against us or to gain leverage in settlement negotiations, we may be forced to significantly increase the size of our intellectual property portfolio through internal efforts and acquisitions from third parties, both of which could require significant expenditures. However, a robust intellectual property portfolio may provide little or no deterrence, particularly for patent holding companies or other patent owners that have no relevant product revenues.

We use "open source" software in our solutions, which may restrict how we distribute our offerings, require that we release the source code of certain software subject to open source licenses or subject us to possible litigation or other actions that could adversely affect our business.

We currently use in our solutions, and expect to continue to use in the future, software that is licensed under so-called "open source," "free" or other similar licenses. Open source software is made available to the general public on an "as-is" basis under the terms of a non-negotiable license. We currently combine our proprietary software with open source software but not in a manner that we believe requires the release of the source code of our proprietary software to the public. We do not plan to integrate our proprietary software with open source software in ways that would require the release of the source code of our proprietary software to the public, however, our use and distribution of open source software may entail greater risks than use of third-party commercial software. Open source licensors generally do not provide warranties or other contractual protections regarding infringement claims or the quality of the code. In addition, if we combine our proprietary software with open source software in a certain manner, we could, under certain open source licenses, be required to release to the public or remove the source code of our proprietary software. We may also face claims alleging noncompliance with open source license terms or infringement or misappropriation of proprietary software. These claims could result in litigation, require us to purchase a costly license or remove the software. In addition, if the license terms for open source software that we use change, we may be forced to re-engineer our solutions, incur additional costs or discontinue the sale of our offerings if re-engineering could not be accomplished on a timely basis. Although we monitor our use of open source software to avoid subjecting our offerings to unintended conditions, few courts have interpreted open source licenses, and there is a risk that these licenses could be construed in a way that could impose unanticipated conditions or restrictions on our ability to commercialize our offerings. We cannot guarantee that we have incorporated open source software in our software in a manner that will not subject us to liability, or in a manner that is consistent with our current policies and procedures.

The installation and operation of solar energy systems depends heavily on suitable solar and meteorological conditions. If meteorological conditions are unexpectedly unfavorable, the electricity production from our solar energy systems may be substantially below our expectations and our ability to timely deploy new systems may be adversely impacted.

The energy produced and revenue and cash receipts generated by a solar energy system depend on suitable solar, atmospheric and weather conditions, all of which are beyond our control. Furthermore, components of our systems, such as panels and inverters, could be damaged by severe weather or other natural disasters, such as hailstorms, hurricanes, lightning or wildfires. Although we maintain insurance to cover for many such casualty events, our investment funds would be obligated to bear the expense of repairing the damaged solar energy systems, sometimes subject to limitations based on our ability to successfully make warranty claims. Our economic model and projected returns on our systems require us to achieve certain production results from our systems and, in some cases, we guarantee these results for both our customers and our investors. If the systems underperform for any reason, our financial results could suffer. These risks are amplified by the anticipated increase in the frequency of extreme weather events due to rising average temperatures worldwide.

Sustained unfavorable weather also could delay our installation of solar energy systems, leading to increased expenses and decreased revenue and cash receipts in the relevant periods. We have experienced seasonal fluctuations in our operations. The amount of revenue we recognize in a given period from PPAs is dependent in part on the amount of energy generated by solar energy systems under such contracts. As a result, operating leases and incentives revenue is impacted by seasonally shorter daylight hours in winter months. In addition, our ability to install solar energy systems is impacted by weather. We have limited ability to install solar energy systems during the winter months in the Northeastern United States. Such delays can impact the timing of when we can install and begin to generate revenue from solar energy systems. However, given that we are in a growing industry, the true extent of these fluctuations may have been masked by our historical growth rates and thus may not be readily apparent from our historical operating results and may be difficult to predict. As such, our historical operating results may not be indicative of future performance. Furthermore, weather patterns could change, making it harder to predict the average annual amount of sunlight striking each location where we install a solar energy system. This could make our solar energy systems less economical individually or in the aggregate. Any of these events or conditions could harm our business, financial condition, results of operations and prospects.

Disruptions to our solar monitoring systems could negatively impact the operation of our business and our revenues and increase our expenses.

Our ability to accurately charge our customers for the energy produced by our solar energy systems depends on our ability to monitor our customers' solar energy systems. Our customer agreements require our customers to maintain a broadband internet connection so that we may receive data regarding solar energy system production from their home networks. We could incur significant expenses or disruptions of our operations in connection with failures of our solar monitoring systems, including failures of our customers' home networks that would prevent us from accurately monitoring solar energy production. In addition, sophisticated hardware and operating system software and applications that we procure from third parties may contain defects in design or manufacture, including "bugs" and other problems that could unexpectedly interfere with the operation of our systems. The costs to us to eliminate or alleviate viruses and bugs, or any problems associated with failures of our customers' home networks could be significant, and the efforts to address these problems could result in interruptions, delays or cessation of service that may impede our sales, distribution or other critical functions. When a customer's solar monitoring system is not properly communicating with us, we estimate the production of their solar energy systems. Such estimates may prove inaccurate and could cause us to underestimate the power being generated by our solar energy systems and undercharge our customers, thereby harming our results of operations.

We are exposed to the credit risk of our customers.

Our customers most commonly purchase energy or lease solar energy systems from us pursuant to one of two types of long-term contracts: a PPA or a Solar Lease. The terms of PPAs and Solar Leases are typically for 20 years and require the customer to make monthly payments to us. Accordingly, we are subject to the credit risk of our customers. As of December 31, 2018, the average FICO score of our customers was approximately 760. However, as we grow our business, the risk of customer defaults could increase. Our reserve for this exposure is estimated to be \$5.2 million as of December 31, 2018, and our future exposure may exceed the amount of such reserves. While we do not currently extend credit to customers interested in System Sales, many of those customers are interested in financing the purchase of a solar energy system. While these customers may seek third-party financing through their own lender or a lender with whom we have a relationship, if they do not have sufficient credit to qualify for a loan, they may be unable to purchase a solar energy system. This could reduce our potential customer pool and limit our System Sales.

A failure to comply with laws and regulations relating to our interactions with current or prospective residential customers could result in negative publicity, claims, investigations and litigation, and adversely affect our financial performance.

Our business focuses on contracts and transactions with residential customers. We must comply with numerous federal, state and local laws and regulations that govern matters relating to our interactions with consumers, including those pertaining to privacy and data security, consumer financial and credit transactions, home improvement contracts, warranties, door-to-door solicitation as well as specific regulations pertaining to sales and installations of solar energy systems. These laws and regulations are dynamic and subject to potentially differing interpretations, and various federal, state and local legislative and regulatory bodies may initiate investigations, expand current laws or regulations, or enact new laws and regulations, regarding these matters. Changes in these laws or regulations or their interpretation could dramatically affect how we do business, acquire customers, and manage and use information we collect from and about current and prospective customers and the costs associated therewith.

Several states in which we operate, including Arizona, California, Florida, Maryland, Nevada, New Mexico, New York and Utah, have enacted laws and regulations that provide enhanced rights and require increased disclosures to customers. Most of these laws and regulations are specific to the solar industry and have required changes to our contracts and processes. Some of the laws have been enacted along with other changes to state law that further impact the residential solar industry. Other laws and regulations, such as the ones that relate to licensing of sales representatives, are applicable to a wide array of industries, and failure to comply with such regulations could result in citations, fines, license suspensions, revocations and other penalties. Further, to the extent that states undertake enforcement actions against us or other states enact further laws or regulations applicable to our industry, we may be required to expend additional resources in order to modify our business practices to meet these regulatory requirements.

We strive to comply with all applicable laws and regulations relating to our interactions with residential customers. It is possible, however, that these requirements may be interpreted and applied in a manner that is inconsistent from one jurisdiction to another and may conflict with other rules or our practices. For example, in March 2018, the New Mexico Attorney General's office filed an action against us and certain of our officers alleging violation of state consumer protection statutes. If federal, state or other local regulators or agencies were to initiate an investigation against us or enact regulations relating to the marketing of our products to residential consumers, responding to such investigation or complying with such regulations could divert management's attention to our business, require us to modify our operations and incur significant additional expenses, which could have an adverse effect on our business, financial condition and results of operations or could reduce the number of our potential customers.

We cannot ensure that our sales force will comply with our standard practices and policies, as well as applicable laws and regulations, including sales licensure requirements. Any such non-compliance, or the perception of noncompliance, potentially could expose us to claims, proceedings, litigation, investigations, and/or enforcement actions by private parties and regulatory authorities, as well as substantial fines and negative publicity, each of which may materially and adversely affect our business. We have incurred, and will continue to incur, significant expenses to comply with the laws, regulations and industry standards that apply to us.

Any unauthorized access to, or disclosure or theft of personal information or other proprietary information we gather, store or use could harm our reputation and subject us to claims or litigation.

We receive, store and use personal information of our customers, including names, addresses, e-mail addresses, credit information and other housing and energy use information. We also store and use personal information of our employees. In addition, we previously used certain shared information and technology systems with Vivint, and Vivint continues to store some of our historical data. We take certain steps in an effort to protect the security, integrity and confidentiality of the personal information and other proprietary and confidential information we collect, store or transmit, but there is no guarantee that inadvertent or unauthorized use or disclosure will not occur or that third parties will not gain unauthorized access to this information despite our efforts. Because techniques used to obtain unauthorized access or sabotage systems change frequently and generally are not identified until they are launched against a target, we and our suppliers or vendors, including Vivint, may be unable to anticipate these techniques or to implement adequate preventative or mitigation measures. In addition, due to a potential time lapse between when a sales representative leaves us and when we are made aware of the separation, sales representatives may have continued access to our customers' information for a period when they should not.

We are also subject to laws and regulations relating to the collection, use, retention, security and transfer of personal information of our customers. In many cases, these laws apply not only to third-party transactions, but also to transfers of information between one company and its subsidiaries. Several jurisdictions have passed new laws in this area, and other jurisdictions are considering imposing additional restrictions. These laws continue to develop and may be inconsistent from jurisdiction to jurisdiction. In addition to government regulation, privacy advocates and industry groups may propose new and different self-regulatory standards that either legally or contractually apply to us, such as the Payment Card Industry Data Security Standard, or PCI DSS, which may affect any processes associated with handling credit card numbers. In the event we fail to be compliant with the PCI DSS, fines and other penalties could result. Complying with emerging and changing requirements may cause us to incur costs or require us to change our business practices. Any actual or alleged failure by us, our affiliates or other parties with whom we do business to comply with privacy-related or data protection laws, regulations and industry standards could result in proceedings against us by governmental entities or others, which could have a detrimental effect on our business, results of operations and financial condition.

Any actual or perceived unauthorized use or disclosure of, or access to, any personal information or other proprietary or confidential information maintained by us or on our behalf, whether through breach of our systems, breach of the systems of our suppliers or vendors, including Vivint, by an unauthorized party, or through employee or contractor error, theft or misuse, or otherwise, could harm our business. If any such unauthorized use or disclosure of, or access to, such personal information was to occur or to be believed to have occurred, our operations could be seriously disrupted, and we could be subject to demands, claims and litigation by private parties, and investigations, related actions, and penalties by regulatory authorities. In addition, we could incur significant costs in notifying affected persons and entities and otherwise complying with the multitude of federal, state and local laws and regulations relating to unauthorized access to, or use or disclosure of, personal information. Finally, any perceived or actual unauthorized access to, or use or disclosure of, such information could harm our reputation, substantially impair our ability to attract and retain customers and have an adverse impact on our business, financial condition and results of operations.

We are involved, and may become involved in the future, in legal proceedings that, if adversely adjudicated or settled, could adversely affect our financial results.

We are, and may in the future become, party to litigation. For examples, see Note 17—Commitments and Contingencies. While we intend to defend against these actions vigorously, the ultimate outcomes of these cases are presently not determinable as they are in preliminary phases. In general, litigation claims can be expensive and time consuming to bring or defend against, may result in the diversion of management attention and resources from our business and business goals and could result in settlements or damages that could significantly affect financial results and the conduct of our business. It is not possible to predict the final resolution of the litigation to which we currently are or may in the future become party, and the impact of certain of these matters on our business, prospects, financial condition, liquidity, results of operations and cash flows.

Our reported financial results may be affected, and comparability of our financial results with other companies in our industry may be impacted, by changes in the accounting principles generally accepted in the United States.

Generally accepted accounting principles in the United States are subject to change and interpretation by the Financial Accounting Standards Board, or FASB, the Securities and Exchange Commission, or SEC, and various bodies formed to promulgate and interpret appropriate accounting principles. A change in these principles or interpretations could have a significant effect on our reported financial results and on the financial results of other companies in our industry and may even affect the reporting of transactions completed before the announcement or effectiveness of a change. For example, in May 2014 the FASB issued Accounting Standards Update No. 2014-09, Revenue from Contracts with Customers (Topic 606), which affected certain elements of our accounting for revenue and costs incurred to acquire contracts as we adopted this standard on January 1, 2018. Other companies in our industry may be affected differently by the adoption of Topic 606 or other new accounting standards, including timing of the adoption of new accounting standards, adversely affecting the comparability of our financial statements. See Note 2—Summary of Significant Accounting Policies for information about Topic 606.

Risks Related to our Relationship with Vivint

Our inability to resolve any disputes that arise between us and Vivint with respect to our past and ongoing relationships may adversely affect our financial results, and such disputes may also result in claims for indemnification.

Disputes may arise between Vivint and us in a number of areas relating to our past and ongoing relationships, including the following:

- intellectual property, labor, tax, employee benefits, indemnification and other matters arising from our relationship with Vivint;
- employee retention and recruiting;
- our ability to use, modify and enhance the intellectual property that we have licensed from Vivint;
- business combinations or divestitures;
- exclusivity arrangements;
- the nature, quality and pricing of products and services Vivint agrees to provide to us; and
- business opportunities that may be attractive to both Vivint and us.

We have entered into certain agreements with Vivint. In August 2017, we entered into a sales dealer agreement with Vivint. Under this agreement, each party will act as a dealer for the other party to market, promote and sell each other's products. The agreement has a two-year term, which will be automatically renewed for successive one-year terms unless written notice of termination is provided by one of the parties to the other no less than 90 days prior to the end of the then current term. The products, territories and consideration that is payable by each party to the other is determined in accordance with the agreement. There can be no assurances regarding the number of sales and installations of our products that Vivint will be able to generate, or the number of leads that we will be able to generate. In addition, as we work to expand our customer opportunities and product offerings through our relationship with Vivint, our business and results of operations may be adversely affected by factors that affect Vivint's business and our relationship. Pursuant to the terms of a Non-Competition Agreement we have entered into with Vivint, as amended, we and Vivint each have agreed not to solicit for employment any member of the other's executive or senior management team, or any of the other's employees who primarily manage sales, installation or services of the other's products and services until the termination of the sales dealer agreement. The commitment not to solicit each other's employees lasts for 180 days after such employee finishes employment with us or Vivint. Historically, we had recruited a significant number of our sales personnel from Vivint. This agreement may require us to obtain personnel from other sources, and any inability to do so may limit our ability to continue scaling our business if we are unable to do so. Notwithstanding the above, a small number of sales representatives work for both Vivint and us. To the extent there is any confusion concerning the relationship between us and Vivint with respect to the products and services we offer and the products and services of Vivint, such sales representatives could expose us to increased claims, proceedings, litigation and investigations by consumers and regulatory authorities. In addition, having sales representatives who work for both Vivint and us could distract such sales representatives, impact the effectiveness of our sales force, and potentially increase the turnover of our existing sales representatives who may feel displaced by the addition of Vivint sales representatives to our sales force.

We may not be able to resolve any potential conflicts relating to these agreements or otherwise, and even if we do, the resolution may be less favorable than if we were dealing with an unaffiliated party. In addition, we have indemnification obligations under some of the agreements we have entered into with Vivint, and disputes between us and Vivint may result in claims for indemnification. However, we do not currently expect that these indemnification obligations will materially affect our potential liability compared to what it would be if we did not enter into these agreements with Vivint.

Risks Related to Our Common Stock

The price of our common stock may be volatile, and the value of your investment could decline.

The trading price of our common stock may be highly volatile. From our initial public offering on October 1, 2014 to December 31, 2018, the closing price of our common stock has ranged from a high of \$16.01 to a low of \$2.22. Our stock price could continue to be subject to wide fluctuations in response to various factors, some of which are beyond our control. These factors include:

- our financial condition and the availability and terms of future financing;
- changes in laws or regulations applicable to our industry or offerings, including any new tariffs or trade regulations that affect our ability to import goods at attractive prices or at all;
- additions or departures of key personnel;
- actual or anticipated changes in expectations regarding our performance by investors or securities analysts;
- securities litigation involving us;
- price and volume fluctuations in the overall stock market;
- volatility in the market price and trading volume of companies in our industry or companies that investors consider comparable;
- share price and volume fluctuations attributable to inconsistent trading volume levels of our shares;
- the failure of securities analysts to cover our common stock;
- our ability to protect our intellectual property and other proprietary rights;
- sales of our common stock by us, our stockholders or our employees, including sales of equity awards granted to our employees to cover tax withholding obligations;
- litigation or disputes involving us, our industry or both;
- major catastrophic events;
- general economic and market conditions; and
- potential acquisitions.

Further, the stock markets have experienced extreme price and volume fluctuations that have affected and continue to affect the market prices of equity securities of many companies. These fluctuations often have been unrelated or disproportionate to the operating performance of those companies. In addition, the stock prices of many renewable energy companies have experienced wide fluctuations that have often been unrelated to the operating performance of those companies. These broad market and industry fluctuations, as well as general economic, political and market conditions such as recessions, interest rate changes or international currency fluctuations, may cause the market price of our common stock to decline. If the market price of our common stock decreases, investors may not realize any return on investment and may lose some or all of their investments. In the past, companies that have experienced volatility in the market price of their stock have been subject to securities class action litigation. We could become the target of additional securities litigation in the future, which could result in substantial costs and divert our management's attention from other business concerns, which could seriously harm our business.

As an emerging growth company and smaller reporting company within the meaning of the Securities Act, we will utilize certain modified disclosure requirements, and we cannot be certain if these reduced requirements will make our common stock less attractive to investors.

We are an emerging growth company, and, for as long as we continue to be an emerging growth company, we may choose to take advantage of exemptions from various reporting requirements applicable to other public companies but not to emerging growth companies including, but not limited to, not being required to have our independent registered public accounting firm audit our internal control over financial reporting under Section 404 of the Sarbanes-Oxley Act, reduced disclosure obligations regarding executive compensation in our periodic reports and proxy statements, and exemptions from the requirements of holding a nonbinding advisory vote on executive compensation and stockholder approval of any golden parachute payments not previously approved. We have utilized, and we plan in future filings with the SEC to continue to utilize, the modified disclosure requirements available to emerging growth companies. As a result, our stockholders may not have access to certain information they may deem important.

We could remain an emerging growth company until the earliest of (1) December 31, 2019, (2) the last day of the first fiscal year in which our annual gross revenue exceeds \$1.1 billion, (3) the date that we become a large accelerated filer as defined in Rule 12b-2 under the Exchange Act, which would occur if we become a seasoned issuer and the market value of our common stock that is held by non-affiliates exceeds \$700 million as of the last business day of our most recently completed second fiscal quarter and (4) the date on which we have issued more than \$1 billion in non-convertible debt securities during the preceding three-year period.

Even after we no longer qualify as an emerging growth company, we may still qualify as a smaller reporting company, which would allow us to take advantage of many of the same exemptions from disclosure requirements. Similar to emerging growth companies, smaller reporting companies have reduced disclosure obligations regarding executive compensation in periodic reports and proxy statements and have certain other reduced disclosure obligations in their SEC filings.

We cannot predict if investors will find our common stock less attractive because we may rely on these exemptions. If some investors find our common stock less attractive as a result, there may be a less active trading market for our common stock and our stock price may be more volatile.

Our stock price could decline due to the large number of outstanding shares of our common stock eligible for future sale.

Sales of substantial amounts of our common stock in the public market, or the perception that these sales could occur, could cause the market price of our common stock to decline. These sales could also make it more difficult for us to sell equity or equity-related securities in the future at a time and price that we deem appropriate.

As of December 31, 2018, we had 120.1 million outstanding shares of common stock. These shares may be sold in the public market in the United States, subject to prior registration in the United States, if required, or reliance upon an exemption from U.S. registration, including, in the case of shares held by affiliates or control persons, compliance with the volume restrictions of Rule 144.

In addition, we have granted and expect to continue to grant equity awards to our directors and employees as additional compensation in an effort to align their interests with those of our stockholders. Approximately 2.7 million shares of our common stock are reserved for future issuance under our Long-Term Incentive Plan, and these shares will issue, vest and be immediately tradable without restriction on the date that our Sponsor and its affiliates achieve specified returns on their invested capital.

Further, equity awards for 9.6 million shares of common stock remained outstanding as of December 31, 2018, with 1.6 million of those shares being vested and exercisable as of December 31, 2018. Additionally, "sell-to-cover" transactions are utilized in connection with the vesting and settlement of equity awards that are granted to our employees so that shares of our common stock are sold on behalf of our employees in an amount sufficient to cover the tax withholding obligations associated with these awards. As a result of these transactions, a significant number of shares of our stock may be sold over a limited time period in connection with significant vesting events. For example, during the month of May 2018, approximately 2.3 million restricted stock units vested and settled, which increased the volume of our shares that would otherwise have been sold during that time.

Stockholders owning an aggregate of 76.4 million shares of our common stock are entitled, under contracts providing for registration rights, to require us to register shares of our common stock owned by them for public sale in the United States, subject to the restrictions of Rule 144. In October 2014, we filed a registration statement on Form S-8 to register 22.9 million shares previously issued or reserved for future issuance under our equity compensation plans and agreements, and we registered an additional 12.9 million shares in March 2017. Under these registration statements, subject to the satisfaction of applicable vesting periods, the shares of common stock issued upon exercise of outstanding options and vested restricted stock units will be available for immediate resale in the United States in the open market. Sales of our common stock as restrictions end or pursuant to registration rights may make it more difficult for us to sell equity securities in the future at a time and at a price that we deem appropriate. These sales also could cause our stock price to fall and make it more difficult for investors to sell shares of our common stock.

Our Sponsor and its affiliates control us, and their interests may conflict with ours or investors' in the future.

As of December 31, 2018, 313 Acquisition LLC, which is controlled by our Sponsor and its affiliates, beneficially owned approximately 62% of our common stock. Moreover, under our organizational documents and the stockholders agreement with 313 Acquisition LLC, for so long as our existing owners and their affiliates retain significant ownership of us, we will agree to nominate to our board individuals designated by our Sponsor, whom we refer to as the Sponsor directors. In addition, for so long as 313 Acquisition LLC continues to own shares representing a majority of the total voting power, we will agree to nominate to our board individuals appointed by Summit Partners and Todd Pedersen. Even when our Sponsor and its affiliates and certain of its co-investors cease to own shares of our stock representing a majority of the total voting power, for so long as our Sponsor and its affiliates continue to own a significant percentage of our stock our Sponsor will still be able to significantly influence the composition of our board of directors and the approval of actions requiring stockholder approval. In addition, under the stockholders agreement, affiliates of our Sponsor will have consent rights with respect to certain actions involving our company, provided a certain aggregate ownership threshold is maintained collectively by our Sponsor and its affiliates, together with Summit Partners, Todd Pedersen and Alex Dunn and their respective affiliates. Accordingly, for such period of time, our Sponsor and certain of its co-investors will have significant influence with respect to our management, business plans and policies, including the appointment and removal of our officers. In particular, for so long as our Sponsor and its affiliates continue to own a significant percentage of our stock, our Sponsor will be able to cause or prevent a change of control of our company or a change in the composition of our board of directors and could preclude any unsolicited acquisition of our company. The concentration of ownership could deprive investors of an opportunity to receive a premium for shares of common stock as part of a sale of our company and ultimately might affect the market price of our common stock.

Our Sponsor and its affiliates engage in a broad spectrum of activities, including investments in the energy sector. In the ordinary course of their business activities, our Sponsor and its affiliates may from time to time acquire and hold interests in businesses that compete directly or indirectly with us. For example, affiliates of our Sponsor regularly invest in utility companies and solar and renewable energy companies that may compete with us. Our certificate of incorporation provides that none of our Sponsor, any of its affiliates or any director who is not employed by us (including any non-employee director who serves as one of our officers in both his or her director and officer capacities) or his or her affiliates will have any duty to refrain from engaging, directly or indirectly, in the same business activities or similar business activities or lines of business in which we operate. Our Sponsor also may pursue acquisition opportunities that may be complementary to our business, and, as a result, those acquisition opportunities may not be available to us. In addition, our Sponsor may have an interest in pursuing acquisitions, divestitures and other transactions that, in its judgment, could enhance its investment, even though such transactions might involve risks to investors.

We have elected to take advantage of the “controlled company” exemption to the corporate governance rules for New York Stock Exchange, or NYSE, listed companies, which could make our common stock less attractive to some investors or otherwise harm our stock price.

Because we qualify as a “controlled company” under the corporate governance rules for NYSE listed companies, we are not required to have a majority of our board of directors be independent, nor are we required to have a compensation committee or an independent nominating function. In light of our status as a controlled company, in the future we could elect not to have a majority of our board of directors be independent or not to have a compensation committee or nominating and governance committee. Accordingly, should the interests of 313 Acquisition LLC or our Sponsor differ from those of other stockholders, the other stockholders may not have the same protections afforded to stockholders of companies that are subject to all of the corporate governance rules for NYSE listed companies. Our status as a controlled company could make our common stock less attractive to some investors or otherwise harm our stock price.

Provisions in our certificate of incorporation, bylaws, stockholders agreement and under Delaware law might discourage, delay or prevent a change of control of our company or changes in our management and, therefore, depress the trading price of our common stock.

Our certificate of incorporation, bylaws and stockholders agreement contain provisions that could depress the trading price of our common stock by discouraging, delaying or preventing a change of control of our company or changes in our management that the stockholders of our company may believe advantageous. These provisions include:

- establishing a classified board of directors so that not all members of our board of directors are elected at one time;
- authorizing “blank check” preferred stock that our board of directors could issue to increase the number of outstanding shares to discourage a takeover attempt;
- limiting the ability of stockholders to call a special stockholder meeting;
- limiting the ability of stockholders to act by written consent;
- providing that the board of directors is expressly authorized to make, alter or repeal our bylaws;
- establishing advance notice requirements for nominations for elections to our board of directors or for proposing matters that can be acted upon by stockholders at stockholder meetings;
- requiring our Sponsor to consent to certain actions, as described under the section of our 2018 Proxy Statement captioned “Related Party Transactions—Agreements with Our Sponsor,” for so long as our Sponsor, Summit Partners, Todd Pedersen and Alex Dunn or their respective affiliates collectively own, in the aggregate, at least 30% of our outstanding shares of common stock;
- the removal of directors only for cause and only upon the affirmative vote of the holders of at least 66-2/3% in voting power of all the then-outstanding shares of stock of our company entitled to vote thereon, voting together as a single class, if Blackstone and its affiliates beneficially own, in the aggregate, less than 30% in voting power of the stock of our company entitled to vote generally in the election of directors; and
- that certain provisions may be amended only by the affirmative vote of the holders of at least 66-2/3% in voting power of all the then-outstanding shares of stock of our company entitled to vote thereon, voting together as a single class, if Blackstone and its affiliates beneficially own, in the aggregate, less than 30% in voting power of the stock of our company entitled to vote generally in the election of directors.

If securities or industry analysts do not publish or cease publishing research or reports about us, our business or our market, or if they change their recommendations regarding our stock adversely, our stock price and trading volume could decline.

The trading market for our common stock will be influenced by the research and reports that industry or securities analysts may publish about us, our business, our market or our competitors. If any of the analysts who do now, or may in the future, cover us change their recommendation regarding our stock adversely, or provide more favorable relative recommendations about our competitors, our stock price would likely decline. If any analyst who may cover us were to cease coverage of our company or fail to regularly publish reports on us, we could lose visibility in the financial markets, which in turn could cause our stock price or trading volume to decline.

Item 1B. Unresolved Staff Comments.

None.

Item 2. Properties.

Our corporate headquarters and executive offices are located in Lehi, Utah, where we lease approximately 150,000 square feet of office space under a lease that expires in 2031. We previously had a lease for a second office building to be constructed adjacent to our corporate headquarters that was terminated in February 2019. Concurrent with the termination, we entered into a new lease for approximately 32,000 square feet of office space in the second office building, which is expected to commence in 2020. We believe that our currently leased space is sufficient to meet our current needs and our anticipated growth.

Our other locations include leased warehouses and sales offices that range from approximately 1,000 to 36,000 square feet for terms ranging from one to seven years in the states in which we operate.

Item 3. Legal Proceedings.

For a list of our current legal proceedings, see Note 17—Commitments and Contingencies.

Item 4. Mine Safety Disclosures.

Not applicable.

PART II

Item 5. Market for Registrant's Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities.

Market Information

Our common stock has been traded on the New York Stock Exchange, or NYSE, since October 1, 2014 under the symbol "VSLR." Prior to October 1, 2014, there was no established public trading market for our common stock.

Holders of Record

As of March 1, 2019, we had 273 stockholders of record of our common stock. The actual number of stockholders is greater than this number of record holders and includes stockholders who are beneficial owners but whose shares are held in street name by brokers and other nominees. This number of holders of record also does not include stockholders whose shares may be held in trust by other entities.

Recent Sales of Unregistered Securities

None .

Issuer Purchase of Equity Securities

None.

Dividend Policy

We have never declared or paid any cash dividends on our common stock. We currently intend to retain any future earnings to fund our growth, and we do not anticipate declaring or paying any cash dividends in the foreseeable future. Additionally, the terms of one or more of our current debt instruments restrict our ability to pay cash dividends on our common stock. Any future determination to declare cash dividends will be made at the discretion of our board of directors, subject to applicable laws and provisions of our debt instruments and organizational documents, after taking into account our financial condition, results of operations, capital requirements, general business conditions and other factors that our board of directors may deem relevant.

Item 6. Selected Financial Data.

We are not required to provide the information required by this Item 6 as we are a smaller reporting company.

Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations.

Overview

You should read the following discussion together with our consolidated financial statements and the related notes included in Item 8 of this report. This discussion contains forward-looking statements about our business and operations. Our actual results may differ materially from those we currently anticipate as a result of the many factors, including those we describe under Item 1A "Risk Factors" and elsewhere in this report. See "Forward-Looking Statements."

Business Overview

We offer distributed solar energy — electricity generated by a solar energy system installed at or near customers' locations — to residential customers primarily through a customer-focused and neighborhood-driven direct-to-home sales model. We believe we are disrupting the traditional electricity market by satisfying customers' demand for increased energy independence and less expensive, more socially responsible electricity generation. As a result, we primarily compete with traditional utilities in the markets we serve, and our strategy is to price the energy we sell below prevailing retail electricity rates. The price our customers pay to buy energy from us varies depending on the state where the customer is located, the impact of the local traditional utility, customer price sensitivity, the availability of incentives and rebates, the need to offer a compelling financial benefit and the price other solar energy companies charge in the region. We also compete with distributed solar energy system providers for solar energy system sales on the basis of price, service and availability of financing options.

Our primary product offerings include the following :

- *Power Purchase Agreements.* Under power purchase agreements, or PPAs, we charge customers a fee per kilowatt hour based on the electricity production of the solar energy system, which is billed monthly. PPAs typically have a term of 20 years and are subject to an annual price escalator of 2.9%. Over the term of the PPA, we operate the system and agree to maintain it in good condition. Customers who buy energy from us under PPAs are covered by our workmanship warranty equal to the length of the term of these agreements.
- *Legal-form Leases.* Under legal-form leases, or Solar Leases, we charge customers a fixed monthly payment to lease the solar energy system, which is based on a calculation that accounts for expected solar energy generation. Solar Leases typically have a term of 20 years and are typically subject to an annual price escalator of 2.9%, though some markets offer Solar leases with no annual price escalator. We provide our Solar Lease customers a performance guarantee, under which we agree to refund certain payments to the customer if the solar energy system does not meet the guaranteed production level in the prior 12-month period. Over the term of the Solar Lease, we operate the system and agree to maintain it in good condition, and in some markets we offer to install a battery storage system along with the solar energy system. Customers who lease equipment from us under Solar Leases are covered by our workmanship warranty equal to the length of the term of these agreements.
- *Solar Energy System Sales.* Under solar energy system sales, or System Sales, we offer our customers the option to purchase solar energy systems for cash or through third-party financing. The price for these contracts is determined as a function of the respective market rate and the size of the solar energy system to be installed. Customers can additionally contract with us for certain structural upgrades, smart home products, battery storage systems, electric vehicle charging stations and other accessories in connection with the installation of a solar energy system based on the market where they are located. We believe System Sales are advantageous to us as they provide immediate access to cash.

Of our 196.0 megawatts installed in 2018, approximately 79% were installed under PPAs, 6% were installed under Solar Leases and 15% were installed under System Sales.

From time to time, we have adjusted our installation policies and pricing. We have become more selective in our installation policies to increase incremental value by limiting the installation of smaller system sizes and limiting installations on certain roof types. We have also changed our pricing in certain markets to increase returns on investment or to place ourselves in a more competitive position. We continue to evaluate and make adjustments to our installation policies and pricing as our processes become more efficient and power rates increase. We also continue to evaluate pricing to optimize our use of capital based on market conditions and utility rates.

Our ability to offer long-term customer contracts depends in part on our ability to finance the installation of the solar energy systems by co-investing or entering into lease arrangements with fund investors who value the resulting customer receivables and ITCs, accelerated tax depreciation and other incentives related to the solar energy systems primarily through structured investments known as “tax equity.” Tax equity investments are generally structured as non-recourse project financings known as investment funds. In the context of the distributed solar energy market, tax equity investors make an upfront advance payment to a sponsor through an investment fund in exchange for a share of the tax attributes and cash flows emanating from an underlying portfolio of solar energy systems. In these investment funds, the U.S. federal tax attributes offset taxes that otherwise would have been payable on the investors’ other operations. The terms and conditions of each investment fund vary significantly by investor and by fund. We continue to negotiate with financial investors to create additional investment funds.

In general, our investment funds have adopted the partnership or inverted lease structures. Under partnership structures, we and our fund investors contribute cash into a partnership company. The partnership uses this cash to acquire solar energy systems developed by us and sells energy from such systems to customers or directly leases the solar energy systems to customers. Under our existing inverted lease structures, we and the fund investor set up a multi-tiered investment vehicle, comprised of two partnership entities, that facilitates the pass through of the tax benefits to the fund investors. In this structure, we contribute solar energy systems to a lessor partnership entity in exchange for interests in the lessor partnership and the fund investors contribute cash to a lessee partnership in exchange for interests in the lessee partnership which in turn makes an investment in the lessor partnership entity in exchange for interests in the lessor partnership. The lessor partnership distributes the cash contributions received from the lessee partnership to our wholly owned subsidiary that contributed the projects to the lessor partnership. The lessor partnership leases the contributed solar energy systems to the lessee partnership under a master lease, and the lessee partnership pays the lessor partnership rent for those systems.

We have determined that we are the primary beneficiary in these partnership and inverted lease structures for accounting purposes. Accordingly, we consolidate the assets and liabilities and operating results of these partnerships in our consolidated financial statements. We recognize the fund investors' share of the net assets of the investment funds as non-controlling interests and redeemable non-controlling interests in our consolidated balance sheets. These income or loss allocations, reflected on our consolidated statement of operations, may create significant volatility in our reported results of operations, including potentially changing net (loss attributable) income available to common stockholders from loss to income, or vice versa, from quarter to quarter.

Recent Developments

Smaller Reporting Company Status

In June 2018, the SEC issued release number 33-10513, which changed the definition of a smaller reporting company to expand the number of registrants that qualify to provide scaled disclosures. This change became effective September 10, 2018 and registrants were permitted to transition to the scaled disclosures in their next periodic report due after the effective date. Under the new rule, we qualify as a smaller reporting company, and we will continue to take advantage of certain scaled disclosures in this annual report for the year ended December 31, 2018.

Lease Amendments

In February 2019, we terminated the lease for a second office building to be constructed adjacent to our corporate headquarters. The terminated lease included the entire building and, prior to termination, was expected to commence on January 1, 2020. Concurrent with the termination of the lease for the second building, we entered into a new lease for approximately 32,000 square feet of office space in the second office building. This lease is expected to commence on January 1, 2020, and the initial term is approximately 11.5 years, with two options to extend the lease for five years each. We expect to make total rent payments of approximately \$11.2 million over the initial term. Additionally, we agreed to amend the lease for our current corporate headquarters to extend the lease for an additional three years to 2031 and expect to make total additional rent payments of approximately \$14.6 million over the term of the extension.

Key Operating Metrics

We regularly review a number of metrics, including the following key operating metrics, to evaluate our business, measure our performance, identify trends affecting our business, formulate financial projections and make strategic decisions. Some of our key operating metrics are estimates. These estimates are based on our management's beliefs and assumptions and on information currently available to management. Although we believe that we have a reasonable basis for each of these estimates, these estimates are based on a combination of assumptions that may not prove to be accurate over time, particularly given that a number of them involve estimates of cash flows up to 30 years in the future. Underperformance of the solar energy systems, payment defaults by our customers, cancellation of signed contracts, competition from other distributed solar energy companies, development in the distributed solar energy market and the energy market more broadly, technical innovation or other factors described under the section of this report captioned "Risk Factors" could cause our actual results to differ materially from our calculations. Furthermore, while we believe we have calculated these key metrics in a manner consistent with those used by others in our industry, other companies may in fact calculate these metrics differently than we do now or in the future, which would reduce their usefulness as a comparative measure.

- *Solar energy system installations* . Solar energy system installations represents the number of solar energy systems installed on customers' premises. Cumulative solar energy system installations represents the aggregate number of solar energy systems that have been installed on customers' premises. We track the number of solar energy system installations as of the end of a given period as an indicator of our historical growth and as an indicator of our rate of growth from period to period.
- *Megawatts installed* . Megawatts installed represents the aggregate megawatt nameplate capacity of solar energy systems for which panels, inverters, and mounting and racking hardware have been installed on customer premises in the period. Cumulative megawatts installed represents the aggregate megawatt nameplate capacity of solar energy systems for which panels, inverters, and mounting and racking hardware have been installed on customer premises.
- *Estimated nominal contracted payments remaining* . Estimated nominal contracted payments remaining equals the sum of the remaining cash payments that our customers are expected to pay over the term of their PPAs or Solar Leases with us for systems installed as of the measurement date. For a PPA, we multiply the contract price per kilowatt-hour by the estimated annual energy output of the associated solar energy system to determine the estimated nominal contracted payments. For a Solar Lease, we include the monthly fees and upfront fee, if any, as set forth in the lease.

- *Estimated gross retained value under energy contracts* . Estimated gross retained value under energy contracts represents the estimated retained value from the solar energy systems during the typical 20-year term of our PPAs and Solar Leases plus the value of contracted SRECs .
- *Estimated gross retained value of renewal* . Estimated gross retained value of renewal represents the estimated retained value associated with an assumed 10-year renewal term following the expiration of the initial PPA or Solar Lease term. To calculate estimated gross retained value of renewal, we assume all PPAs and Solar Leases are renewed at 90% of the contractual price in effect at the expiration of the initial term.
- *Estimated gross retained value* . Estimated gross retained value represents the net cash flows discounted at 6% that we expect to receive from customers pursuant to PPAs and Solar Leases plus the value of contracted SRECs net of estimated cash distributions to fund investors, debt associated with our forward flow facilities and estimated operating expenses for systems installed as of the measurement date.
- *Estimated gross retained value per watt* . Estimated gross retained value per watt is calculated by dividing the estimated gross retained value as of the measurement date by the aggregate nameplate capacity of solar energy systems under PPAs and Solar Leases that have been installed as of such date, and is subject to the same assumptions and uncertainties as estimated gross retained value.

	Year Ended December 31,	
	2018	2017
Solar energy system installations	27,768	27,232
Megawatts installed	196.0	183.8
	As of December 31,	
	2018	2017
Cumulative solar energy system installations	154,598	126,830
Cumulative megawatts installed	1,060.9	864.9
Estimated nominal contracted payments remaining (in millions)	\$ 3,638.1	\$ 3,021.6
Estimated gross retained value under energy contracts (in millions)	\$ 1,517.0	\$ 1,283.9
Estimated gross retained value of renewal (in millions)	\$ 479.7	\$ 377.1
Estimated gross retained value (in millions)	\$ 1,996.7	\$ 1,661.0
Estimated gross retained value per watt	\$ 2.06	\$ 2.06

Factors Affecting Our Performance

Financing Availability

Our future success depends in part on our ability to raise capital from third-party investors on competitive terms to help finance the deployment of our residential solar energy systems under long-term customer contracts. There are a limited number of potential investment fund investors and the competition for this investment capital is intense. The principal tax credit on which fund investors in our industry rely is the ITC. The amount of the ITC is equal to 30% of the basis of eligible solar property. By statute, the ITC percentage is scheduled to decrease to 26% of the basis of a solar energy system for systems where construction begins in 2020, 22% for systems where construction begins in 2021 and 10% for systems where construction begins after 2021 or where the solar energy system will be placed into service after 2023. We intend to create additional investment funds with financial investors and corporate investors. We also use debt, equity or other financing strategies to fund our operations, including our obligations to make contributions to investment funds. Such other financing strategies may increase our cost of capital. Our future success also depends in part on our ability to partner with third-parties who administer solar loan products.

Incentives; Net Metering

Our cost of capital, the price we can charge for electricity, the cost of our systems and the demand for residential distributed solar energy is impacted by a number of federal, state and local government incentives and regulations, including: tax credits, particularly the ITC; tax abatements; rebate programs; net metering; and solar renewable energy certificates, or SRECs. These programs have on occasion been challenged by incumbent utilities and questioned by those in government and others arguing for less governmental spending and involvement in the energy market. In recent years, net metering programs have been subject to regulatory scrutiny or legislative proposals in some states, such as Arizona, California, Hawaii, Nevada, New Hampshire, New York, Texas and Utah. Many utilities have proposed and are proposing new and varied revisions to their net metering programs, with such proposals ultimately determined by the state public utilities commissions. These revisions include capping the numbers of customers that can elect net metering within a utility service territory, imposing new fixed charges for grid service or interconnection, and reducing the retail rate value of the net metered generation. For example, in 2016, the California Public Utilities Commission enacted changes

requiring customers within the service territory of San Diego Gas and Electric, Pacific Gas and Electric Company, and Southern California Edison Company to take service on a new net metering successor tariff. Under this successor tariff, utilities are allowed to impose reasonable interconnection fees and some additional charges on customers, and will require such customers to take service on time-of-use rates.

We also apply for and receive SRECs and other state-level incentives in certain jurisdictions for power generated by our solar energy systems, which comprise a significant portion of the value to us of the associated solar energy systems. The market for SRECs is extremely volatile and sellers are often able to obtain better unit pricing by selling a large quantity of SRECs. As a result, we may sell SRECs infrequently, at opportune times and in large quantities and the timing and volume of our SREC sales may lead to fluctuations in our quarterly results.

Cost of Solar Energy Systems

Although the solar panel market has seen an increase in supply, upward pressure on prices may occur due to growth in the solar industry, regulatory policy changes and the resulting increase in demand for solar panels and the raw materials necessary to manufacture them. On January 22, 2018, the President of the United States announced the imposition of safeguard measures for a period of four years that include (1) a 30% tariff on imports of solar cells not partially or fully assembled into other products and (2) a 30% tariff on imported solar panels. The tariff on imported solar panels will decline 5% each year in the second, third and fourth years. The safeguard measures went into effect on February 7, 2018 and apply to imports from all foreign countries, including Mexico and Canada, except certain developing countries that are members of the World Trade Organization.

On September 17, 2018, the President of the United States announced the imposition of tariffs on \$200 billion of Chinese goods. Inverters imported from China are listed as subject to the new duties. Tariffs of 10% on inverters went into effect on September 24, 2018, and the tariffs were scheduled to rise to 25% on January 1, 2019. In December 2018, the President agreed to suspend further trade action for 90 days, and in February 2019 to further suspended trade action, to continue negotiations and to leave the tariff at the 10% rate for the time being. Our various inverter suppliers are still determining how they will manage these tariffs. We are currently seeing various responses from inverter suppliers to the 10% tariff, ranging from no price increases to passing on the majority of the tariff to the purchaser through price increases. We are unsure how supplier pricing will be affected by the potential implementation of the 25% tariff. Additionally, it remains unclear whether the tariff applies to all components that accompany an inverter, or just to the inverter itself.

Sustainable Growth

We operate in states whose utility prices, sun exposure, climate conditions and regulatory policies provide for the most compelling market for distributed solar energy. Utility rates, availability of state incentives, other state, regional and local regulations, sun exposure and weather conditions, which can impact sales, installation and system productivity, vary by market. For example, markets in California typically have higher utility rates than markets in the Eastern United States. As a result, systems in California typically have a higher retained value than systems in the Eastern United States. However, we are entitled to receive SRECs and other state incentives in many Eastern states that are not available in the Western United States. Although the impact of such incentives is not reflected in the retained value of the associated systems, they do generate value for us. As a result, our financial and operating results will be affected by the geographic mix of the systems we install. Competition also varies by market and we may compete with national and local solar companies that offer products similar to ours. We plan to enlarge our addressable market by expanding our presence to new states on a measured basis. Offering System Sales to customers allows us to enter markets where customers prefer to own their solar energy systems or locations where our PPAs and Solar Leases are not permitted by local regulations or are not economically feasible.

Sales Channels

We place our integrated solar energy systems through a sales organization that primarily uses a direct-to-home sales model. We believe that a direct, customer-facing sales model is important throughout our sales process to maximize our sales success and customer experience. The members of our sales force typically reside and work within the market they support. We also generate sales through customer referrals. Customer referrals increase in relation to our penetration in a market and become an increasingly effective way to market our solar energy systems shortly after market entry. In addition to direct sales, we sell to customers through our inside sales team and through sales dealer agreements that we have entered into with Vivint and others. We also continue to explore opportunities to sell solar energy systems to customers through a number of other distribution channels, including relationships with real estate management companies, home builders, retailers, large construction, electrical and roofing companies and other third parties that have access to large numbers of potential customers.

Seasonality

We experience seasonal fluctuations in our operations. For example, the amount of revenue we recognize in a given period from PPAs is dependent in part on the amount of energy generated by solar energy systems under such contracts. As a result, operating leases and incentives revenue is impacted by seasonally shorter daylight hours in winter months. In addition, our ability to install solar energy systems is impacted by weather. For example, we have limited ability to install solar energy systems during the winter months in the Northeastern United States and other areas where winter weather is impactful. Such delays can impact the timing of when we can install and begin to generate revenue from solar energy systems. However, the true extent of these fluctuations may have been masked by our historical growth rates and thus may not be readily apparent from our historical operating results and may be difficult to predict. As such, our historical operating results may not be indicative of future performance.

Relationship with Vivint

We have historically relied on the technical support of Vivint, Inc., or Vivint. We used certain of Vivint's information technology and infrastructure until July 2017. Additionally, we have entered into a sales dealer agreement with Vivint. Under this agreement, each party will act as a dealer for the other party to market, promote and sell each other's products. The agreement has a two-year term that will be automatically renewed for successive one-year terms unless written notice of termination is provided by one of the parties to the other no less than 90 days prior to the end of the then current term. The products, territories and consideration that is payable by each party to the other is determined in accordance with the agreement. We incurred fees under the sales dealer agreement of \$16.3 million and \$1.3 million for the years ended December 31, 2018 and 2017. Pursuant to the terms of a Non-Competition Agreement we have entered into with Vivint, as amended, we and Vivint each have agreed not to solicit for employment any member of the other's executive or senior management team, or any of the other's employees who primarily manage sales, installation or services of the other's products and services until the termination of the sales dealer agreement. The commitment not to solicit each other's employees lasts for 180 days after such employee finishes employment with us or Vivint.

Components of Results of Operations

Revenue

Operating Leases and Incentives. We classify and account for our PPAs as operating leases and recognize revenue from these contracts based on the actual amount of power generated at rates specified under the contracts. We also classify and account for our Solar Leases, which include performance guarantees, as operating leases, and recognize revenue from these contracts on a straight-line basis over the lease term.

We apply for and receive SRECs in certain jurisdictions for power generated by solar energy systems we have installed. We generally recognize revenue related to the sale of SRECs upon delivery to the buyer. The market for SRECs is extremely volatile and sellers are often able to obtain better unit pricing by selling a large quantity of SRECs. As a result, we may sell SRECs infrequently, at opportune times and in large quantities and the timing and volume of our SREC sales may lead to fluctuations in our quarterly results.

Solar Energy System and Product Sales. Solar energy system and product sales primarily include revenue from System Sales. Revenue for System Sales is recognized when systems are interconnected to local power grids and granted permission to operate, assuming all other revenue recognition criteria are met. Revenue from System Sales decreased during the year ended December 31, 2018 compared to the year ended December 31, 2017. However, we expect revenue from System Sales to increase in 2019 compared to 2018 due primarily to increased focus on System Sales in specific markets. Revenue related to the sale of photovoltaic installation products is recognized at the time of product shipment to the customer, assuming the remaining revenue recognition criteria have been met. Revenue mix will likely vary on a period-to-period basis as a result of regulatory, competitive and other local market conditions.

The following table sets forth our revenue by major product (in thousands):

	Year Ended December 31,	
	2018	2017
Revenue:		
Operating leases and other incentives	\$ 130,176	\$ 110,052
SREC sales	43,890	33,038
ITC revenue	—	7,772
Total operating leases and incentives	174,066	150,862
System sales	113,129	114,462
Photovoltaic installation products	2,947	1,958
SREC sales	179	746
Total solar energy system and product sales	116,255	117,166
Total revenue	\$ 290,321	\$ 268,028

Operating Expenses

Cost of Revenue—Operating Leases and Incentives. Cost of revenue—operating leases and incentives includes the depreciation of the cost of solar energy systems under long-term customer contracts, which are depreciated for accounting purposes over 30 years; and the amortization of the related capitalized initial direct costs, which are amortized over the term of the long-term customer contract. It also includes allocated indirect material and labor costs related to the processing; account creation; design; installation; interconnection and servicing of solar energy systems that are not capitalized, such as personnel costs not directly associated to a solar energy system installation; warehouse rent and utilities; and fleet vehicle executory costs. The cost of operating leases and incentives also includes allocated facilities and information technology costs. The cost of revenue for the sales of SRECs is limited to broker fees which are paid in connection with certain SREC transactions. In 2019, we expect the cost of operating leases and incentives revenue will increase in absolute dollars compared to 2018.

Cost of Revenue—Solar Energy System and Product Sales . Cost of revenue—solar energy system and product sales consists of direct and allocated indirect material and labor costs and overhead costs for System Sales, photovoltaic installation products and structural upgrades. Indirect material and labor costs are ratably allocated to System Sales and include costs related to the processing; account creation; design; installation; interconnection and servicing of solar energy systems, such as personnel costs not directly associated to a solar energy system installation; warehouse rent and utilities; and fleet vehicle executory costs. The cost of solar energy system and product sales also includes allocated facilities and information technology costs. Costs of solar energy system sales are recognized in conjunction with the related revenue upon the solar energy system passing an inspection by the responsible governmental department after completion of system installation and interconnection to the power grid, assuming all other revenue recognition criteria are met. In 2019, we expect the cost of solar energy system and product sales to increase in absolute dollars compared to 2018.

Sales and Marketing. Sales and marketing expenses include personnel costs, such as salaries, benefits, bonuses and stock-based compensation for our corporate sales and marketing employees, certain non-capitalizable commission payments and exclude costs related to our direct sales personnel that are accounted for as cost of revenue. Sales and marketing expenses also include advertising, promotional and other marketing-related expenses; allocated facilities and information technology costs; travel; professional services and costs related to pre-installation sales activities. In 2019, we expect sales and marketing costs will increase in absolute dollars compared to 2018.

Research and Development. Research and development expense is comprised primarily of salaries and benefits and other costs related to the development of photovoltaic installation products and other solar technologies. Research and development costs are charged to expense when incurred. In 2019, we expect research and development costs will remain relatively consistent in absolute dollars compared to 2018.

General and Administrative. General and administrative expenses include personnel costs, such as salaries, bonuses and stock-based compensation related to our general and administrative personnel; professional fees related to legal, human resources, accounting and structured finance services; travel; and allocated facilities and information technology costs. In 2019, we expect that general and administrative expense will increase in absolute dollars compared to 2018.

Non-Operating Expenses

Interest Expense. Interest expense primarily consists of the interest charges associated with our indebtedness including the amortization of debt issuance costs and the interest component of capital lease obligations. In 2019, we expect our interest expense to increase in absolute dollars compared to 2018 as we have incurred additional indebtedness. Additionally, our debt facilities accrue interest at floating rates and increases in the floating rates would result in higher interest expense.

Other (Income) Expense, net. Other (income) expense, net primarily consists of changes in fair value for our interest rate swaps not designated as hedges and in the year ended December 31, 2018, an initial distribution that we received from one of our legal proceedings.

Income Tax Expense (Benefit). All of our business is conducted in the United States, and therefore income tax expense (benefit) consists of current and deferred income taxes incurred in U.S federal, state and local jurisdictions.

Net (Loss Attributable) Income Available to Stockholders

We determine the net (loss attributable) income available to common stockholders by deducting from net (loss) income the net loss attributable to non-controlling interests and redeemable non-controlling interests. The net loss attributable to non-controlling interests and redeemable non-controlling interests represents the investment fund investors' allocable share in the results of operations of the investment funds that we consolidate.

We have determined that the legal provisions in the contractual arrangements of the investment funds in which there is a non-controlling interest represent substantive profit-sharing arrangements, where the allocation to the partners differs from the stated ownership percentages. We have further determined that the appropriate methodology for attributing income and loss to the non-controlling interests and redeemable non-controlling interests each period is a balance sheet approach using the hypothetical liquidation at book value, or HLBV, method. Under the HLBV method, the amounts of income and loss attributed to the non-controlling interests and redeemable non-controlling interests in the consolidated statements of operations reflect changes in the amounts the fund investors would hypothetically receive at each balance sheet date under the liquidation provisions of the contractual agreements of these funds, assuming the net assets of the respective investment funds were liquidated at recorded amounts determined in accordance with U.S. generally accepted accounting principles, or GAAP. The fund investors' interest in the results of operations of these investment funds is determined as the difference in the fund investors' claim under the HLBV method at the start and end of each reporting period, after taking into account any capital transactions between the fund and the fund investors. For all of our investment funds in which we have an equity interest, the application of HLBV is performed consistently. However, the results of that application and its impact on the income or loss allocated between us and the non-controlling interests and redeemable non-controlling interests depend on the respective funds' specific contractual liquidation provisions. HLBV results are generally affected by, among other factors, the tax attributes allocated to the fund investors including tax bonus depreciation and ITCs, the amount of preferred returns that have been paid to the fund investors by the investment funds, and the allocation of taxable income or losses in a liquidation scenario. As of December 31, 2018, we had one operational investment fund that did not utilize the HLBV method to allocate gains and losses, as we own 100% of the equity of that fund and there is no non-controlling interest attributable to a fund investor.

The contractual liquidation provisions of our existing funds in which there is a non-controlling interest provide that the allocation percentages between us and the investor change, or "flip," under certain circumstances. Prior to the point at which the allocation percentage flips, the investor is entitled to receive a contractually agreed upon allocation of the value generated by the solar energy systems. The allocation of cash payments received from customers may differ from the allocation of other tax benefits. Afterwards, we are entitled to receive the majority of the value generated by the solar energy systems. The difference between our current inverted lease structures and our current partnership structures that drives a significant impact on our results from the application of the HLBV method is how the flip point is determined.

The HLBV calculation is also impacted by the difference between the cash received by us from the investment funds and the carrying value of the solar energy systems contributed to the investment funds. The purchase price paid for solar energy systems by an investment fund is based on the fair market value, as determined by an independent appraiser. As we consolidate both the subsidiary that develops the solar energy systems and the investment fund, the sales of the solar energy systems are considered transactions under common control and are therefore reflected at their historical cost, or their carryover basis. Cash received in excess of the installed purchased solar energy systems' carryover basis is treated as deemed distributions from the investment fund to us. In most cases, any excess of the purchase price over the carryover basis of the solar energy systems would result in allocations of income to us.

A portion of the solar energy systems purchased by, or contributed to, an investment fund are not installed at the time of purchase or contribution and therefore do not have any carryover basis allocated to them. Our wholly owned subsidiary has an obligation to purchase, install and provide the solar energy system equipment to an investment fund for any in-progress projects that were previously purchased by such fund. If our wholly owned subsidiary does not ultimately provide the investment fund with the solar energy systems that it purchased, it is required to refund the purchase price to the investment fund. In these specific cases, we determined that the portion of the cash purchase price paid by an investment fund that relates to in-progress projects should be recorded as a receivable by the investment fund, representing the investment fund's right to receive solar panels and related equipment for solar energy systems that are installed after the project is purchased by the investment fund. Given that our subsidiary controls the investment fund, we have accounted for the receivable balance as a reduction in the investment fund's members' equity in accordance with GAAP. Initially this may result in allocations of losses amongst the partners, as the GAAP equity balance is less than the tax capital account. The allocations of such losses amongst the partners follow the contractual liquidation provisions of the partnership agreements. When such solar energy systems are subsequently installed, the systems are recorded at their carryover basis as a common control transaction and the receivable balance is eliminated. With the elimination of the receivable, the investment fund's member's equity is increased to the extent of the carrying amount of the assets contributed, which results in the reversal of a portion of the prior allocation of losses. In most cases, the reversal of such losses occurs within a short period of time, approximately three to six months. As discussed above, the difference between the receivable balance eliminated and the carryover basis of the installed solar energy systems is treated as deemed distributions from the investment fund to us, and as a result, that portion of the prior allocation of losses is not reversed over time.

We classify certain non-controlling interests with redemption features that are not solely within our control outside of permanent equity. The fair values of these redemption features are calculated by discounting the cash flows subsequent to the expected flip date of the respective investment funds. When the redemption value of our redeemable non-controlling interests exceeds their carrying value after attribution of income or loss under the HLBV method in any period, we make an additional attribution of income to our redeemable non-controlling interests such that their carrying value at least equals the redemption value.

Results of Operations

The results of operations presented below should be reviewed in conjunction with the consolidated financial statements and related notes included elsewhere in this report.

The following table sets forth selected consolidated statements of operations data for each of the periods indicated.

	Year Ended December 31,	
	2018	2017
(In thousands)		
Revenue:		
Operating leases and incentives	\$ 174,066	\$ 150,862
Solar energy system and product sales	116,255	117,166
Total revenue	290,321	268,028
Cost of revenue:		
Cost of revenue—operating leases and incentives	164,920	141,305
Cost of revenue—solar energy system and product sales	83,375	88,977
Total cost of revenue	248,295	230,282
Gross profit	42,026	37,746
Operating expenses:		
Sales and marketing	58,950	38,696
Research and development	1,867	3,340
General and administrative	93,703	79,957
Total operating expenses	154,520	121,993
Loss from operations	(112,494)	(84,247)
Interest expense, net	65,308	64,264
Other (income) expense, net	(4,538)	352
Loss before income taxes	(173,264)	(148,863)
Income tax expense (benefit)	106,299	(157,333)
Net (loss) income	(279,563)	8,470
Net loss attributable to non-controlling interests and redeemable non-controlling interests	(263,971)	(200,628)
Net (loss attributable) income available to common stockholders	\$ (15,592)	\$ 209,098

Comparison of Years Ended December 31, 2018 and 2017

Revenue

	Year Ended December 31,		\$ Change 2018 from 2017
	2018	2017	
(In thousands)			
Revenue:			
Operating leases and incentives	\$ 174,066	\$ 150,862	\$ 23,204
Solar energy system and product sales	116,255	117,166	(911)
Total revenue	\$ 290,321	\$ 268,028	\$ 22,293

Operating Leases and Incentives. The \$23.2 million increase was due in part to a \$19.3 million increase in operating lease revenue as the total megawatts of solar energy systems placed in service under these long-term customer contracts increased by 19% and a \$10.9 million increase in SREC revenue. This increase was partially offset by a decrease in ITC revenue of \$7.8 million due to the adoption of new accounting pronouncements effective January 1, 2018.

Solar Energy System and Product Sales. The \$0.9 million decrease was primarily due to a decrease in solar energy systems placed in service under System Sales compared to 2017, reflecting shifts in product and market mix.

Cost of Revenue

	Year Ended December 31,		\$ Change 2018 from 2017
	2018	2017	
(In thousands)			
Cost of revenue:			
Cost of revenue—operating leases and incentives	\$ 164,920	\$ 141,305	\$ 23,615
Cost of revenue—solar energy system and product sales	83,375	88,977	(5,602)
Total cost of revenue	<u>\$ 248,295</u>	<u>\$ 230,282</u>	<u>\$ 18,013</u>

Cost of Revenue—Operating Leases and Incentives . The \$23.6 million increase was due in part to a \$12.0 million increase related to growth in the post-installation maintenance organization to accommodate the increase in the number of solar energy systems placed in service and other non-capitalized installation expense, and a \$10.4 million increase in depreciation and amortization of solar energy systems due to the increase in the number of solar energy systems placed in service.

Cost of Revenue—Solar Energy System and Product Sales . The \$5.6 million decrease was due in part to the lower volume of System Sales placed in service and to increased efficiencies.

Operating Expenses

	Year Ended December 31,		\$ Change 2018 from 2017
	2018	2017	
(In thousands)			
Operating expenses:			
Sales and marketing	\$ 58,950	\$ 38,696	\$ 20,254
Research and development	1,867	3,340	(1,473)
General and administrative	93,703	79,957	13,746
Total operating expenses	<u>\$ 154,520</u>	<u>\$ 121,993</u>	<u>\$ 32,527</u>

Sales and Marketing . The \$20.3 million increase was primarily due to a \$14.1 million increase in compensation and benefits due in part to an increase in non-capitalized residual commission payments and inside sales headcount, a \$4.6 million increase in pre-installation costs and a \$1.2 million increase in sales incentive programs.

Research and Development . The \$1.5 million decrease was primarily due to a decrease in compensation and benefits resulting from a decrease in research and development headcount.

General and Administrative . The \$13.7 million increase was primarily due to an \$11.8 million increase in professional fees and other costs related to the establishment of financing agreements in the current period and a \$1.6 million increase in compensation and benefits.

Non-Operating Expenses

	Year Ended December 31,		\$ Change 2018 from 2017
	2018	2017	
(In thousands)			
Interest expense, net	\$ 65,308	\$ 64,264	\$ 1,044
Other (income) expense, net	(4,538)	352	(4,890)

Interest Expense . Interest expense increased \$1.0 million primarily due to a \$9.9 million increase in interest expense due to additional borrowings year over year and higher interest rates on our floating-rate debt facilities, a \$9.8 million charge to write off remaining debt issuance costs related to the 2016 Term Loan Facility and Subordinated HoldCo Facility, both of which were refinanced and terminated in the current period, and a \$5.9 million prepayment fee related to the termination of the Subordinated HoldCo Facility. These increases were partially offset by a \$22.5 million reduction in interest expense resulting from the settlement of the interest rate swaps associated with the 2016 Term Loan Facility, which were designated as hedges, and a \$2.1 million reduction in amortization of debt issuance costs.

Other (Income) Expense, net . The \$4.9 million change from other expense to other income was primarily due to a \$2.8 million change in the fair value of our derivative financial instruments and a \$2.1 million payment received as an initial distribution to us in one of our legal proceedings.

	<u>Year Ended December 31,</u>		<u>\$ Change</u> <u>2018 from 2017</u>
	<u>2018</u>	<u>2017</u>	
	(In thousands)		
Income tax expense (benefit)	\$ 106,299	\$ (157,333)	\$ 263,632

The \$263.6 million change from income tax benefit to income tax expense was primarily attributable to a net \$187.5 million deferred tax benefit in 2017 associated with the federal income tax rate being reduced from 35% to 21%, \$53.4 million additional expense as a result of the adoption of ASU 2016-16, under which we now record the income tax consequences of intra-entity transfers during the period in which the transfers occur, a tax-effected \$33.3 million reduced loss before income taxes and \$7.4 million decrease in income tax credits. These increases in income tax expense were partially offset by \$14.8 million associated with the net tax effect of non-controlling interests and redeemable non-controlling interests.

Net Loss Attributable to Non-Controlling Interests and Redeemable Non-Controlling Interests

	<u>Year Ended December 31,</u>		<u>\$ Change</u> <u>2018 from 2017</u>
	<u>2018</u>	<u>2017</u>	
	(In thousands)		
Net loss attributable to non-controlling interests and redeemable non-controlling interests	\$ (263,971)	\$ (200,628)	\$ (63,343)

Net loss attributable to non-controlling interests and redeemable non-controlling interests was allocated using the HLBV method. Generally, gains and losses that are allocated to the fund investors relate to hypothetical liquidation gains and losses resulting from differences between the net assets of the investment fund and the partners' respective tax capital accounts in the investment fund. Losses allocated to the fund investors are generally derived from the receipt of ITCs and tax depreciation under Internal Revenue Code Section 168. These tax benefits are primarily allocated to fund investors and reduce the fund investors' tax capital account. The \$63.3 million increase in net loss attributable to non-controlling interests and redeemable non-controlling interests is primarily due to a higher volume of solar energy systems installed and placed in service into investment funds under PPA and Solar Lease agreements compared to 2017.

Critical Accounting Policies and Estimates

Our discussion and analysis of our financial condition and results of operations are based upon our consolidated financial statements, which have been prepared in accordance with GAAP. GAAP requires us to make estimates and judgments that affect the reported amounts of assets, liabilities, revenue and expenses, cash flows and related footnote disclosures. We base our estimates on historical experience and on various other assumptions that we believe to be reasonable under the circumstances. Actual results may differ from these estimates. Our future consolidated financial statements will be affected to the extent that our actual results materially differ from these estimates.

We believe that the assumptions and estimates associated with ITCs, revenue recognition, solar energy systems, net, the impairment analysis of long-lived assets, stock-based compensation, the provision for income taxes, the valuation of derivative financial instruments, the recognition and measurement of loss contingencies, and non-controlling interests and redeemable non-controlling interests have the greatest potential impact on our consolidated financial statements. Therefore, we consider these to be our critical accounting policies and estimates.

Investment Tax Credits

We apply for and receive ITCs under Section 48(a) of the Internal Revenue Code. The amount of the ITC is equal to 30% of the basis of eligible solar property. We receive all ITCs for solar energy systems that are not sold to customers or placed in our investment funds. We account for our ITCs as a reduction of income tax expense in the year in which the credits arise. We receive minimal allocations of ITCs for solar energy systems placed in our investment funds as the majority of such credits are allocated to the fund investors. Some of our investment funds obligate us to make certain fund investors whole for losses that the investors may suffer in certain limited circumstances resulting from the disallowance or recapture of ITCs as a result of the Internal Revenue Service's, or the IRS, assessment of the fair value of such systems. We have concluded that the likelihood of a recapture event related to these assessments is remote and consequently have not recorded any liability in the consolidated financial statements for any potential recapture exposure.

Revenue Recognition

We adopted ASU 2014-09, *Revenue from Contracts with Customers*, and its various updates, or Topic 606, effective January 1, 2018 using the modified retrospective method with a cumulative adjustment to retained earnings as of January 1, 2018. As such, only the results for the year ended December 31, 2018 presented in our consolidated statements of operations have been reported using the new revenue standard. We applied Topic 606 to all customer contracts not completed by the initial date of application.

We recognize revenue according to the following steps: (1) identification of the contract with a customer, (2) identification of the performance obligations in the contract, (3) determination of the transaction price, (4) allocation of the transaction price to the performance obligations in the contract and (5) recognition of revenue when, or as, we satisfy a performance obligation. Our revenue is composed of operating leases and incentives, and solar energy system and product sales as captioned in the consolidated statements of operations. Operating leases and incentives revenue includes PPA and Solar Lease revenue, SREC sales and rebate incentives. Solar energy system and product sales revenue includes System Sales, which may include structural upgrades in sales contracts and SREC sales related to sold systems, and the sale of photovoltaic installation products. Revenue is recorded net of any sales tax collected.

Operating Leases and Incentives Revenue

We enter into PPAs with residential customers under which the customer agrees to purchase all of the power generated by the solar energy system for the term of the contract, which is 20 years. The agreement includes a fixed price per kilowatt hour with a fixed annual price escalation percentage. Customers have not historically been charged for installation or activation of the solar energy system. For all PPAs, we assess the probability of collectability on a customer-by-customer basis through a credit review process that evaluates their financial condition and ability to pay. We have determined that PPAs should be accounted for as operating leases. As PPA customer payments are dependent on power generation, they are considered contingent rentals and are excluded from future minimum annual lease payments. PPA revenue is recognized based on the actual amount of power generated at rates specified under the contracts.

We also offer solar energy systems to customers pursuant to Solar Leases in certain markets. The customer agreements are structured as Solar Leases due to local regulations that can be read to prohibit the sale of electricity pursuant to the our standard PPA. Pursuant to Solar Leases, the customers' monthly payments are a pre-determined amount calculated based on the expected solar energy generation by the system and typically have included an annual fixed percentage price escalation over the period of the contracts, which is 20 years. We provide our Solar Lease customers a performance guarantee, under which we agree to refund certain payments at the end of each year to the customer if the solar energy system does not meet a guaranteed production level in the prior 12-month period. The guaranteed production levels have varying terms. Depending on the level of the production guarantee, we either (1) recognize revenue on the contracted payments on a straight-line basis over the initial term of the lease, or (2) recognize the monthly lease payments as revenue and record a solar energy performance guarantee liability due to the contingent nature of the lease payments. A significant majority of Solar Leases are recognized on a straight-line basis. Solar energy performance guarantees are recognized as contra-revenue in the period in which the liabilities are recorded.

At times we make nominal cash payments to customers in order to facilitate the finalization of long-term customer contracts and the installation of related solar energy systems. These cash payments are considered lease incentives that are deferred and recognized over the term of the contract as a reduction of revenue.

We currently account for PPAs, Solar Leases, and associated rebates and incentives as minimum lease payments from operating leases under ASC 840, *Leases*. However, we have determined that these agreements do not meet the definition of a lease under ASC 842, *Leases*, and these agreements will be accounted for in accordance with Topic 606 after the adoption of ASC 842. The revenue associated with these contracts is currently shown together on the consolidated statement of operations as revenue from operating leases and incentives. We will adopt ASC 842 effective January 1, 2019. We have determined that under Topic 606 there will be no change from current revenue recognition practices for our PPA revenue stream. For our Solar Leases, we have concluded that the impact of adopting Topic 606 will be immaterial. Revenue from all of our Solar Leases will be recognized on a straight-line basis over the contractual term, currently a significant majority of Solar Leases are already recognized on a straight-line basis. We have also concluded that there will be no material change related to the timing of revenue recognition for rebates and incentives.

We apply for and receive SRECs in certain jurisdictions for power generated by solar energy systems we have installed. When SRECs are granted, we typically sell them to other companies directly, or to brokers, to assist them in meeting their own mandatory emission reduction or conservation requirements. We recognize revenue related to the sale of these certificates upon delivery, assuming the other revenue recognition criteria discussed above are met.

Solar Energy System and Product Sales

We have analyzed the impact of Topic 606 on System Sales and other product sales and have concluded that the revenue recognition associated with these product sales did not change in our consolidated financial statements. We will continue to show this revenue stream as solar energy system and product sales in our consolidated statement of operations. Our principal performance obligation for System Sales is to design and install a solar energy system that is interconnected to the local power grid and granted permission to operate. When the solar energy system has been granted permission to operate, the customer retains all of the significant risks and rewards of ownership of the solar energy system. For certain System Sales, we provide limited post-sale services to monitor the productivity of the solar energy system for 20 years after it has been placed in service. We collect cash during the installation process and recognize revenue for System Sales and other product sales at the placed-in-service date or product delivery date less any revenue allocated to monitoring services. We allocate a portion of the transaction price to the monitoring services by estimating the fair market price that we would charge for these services if offered separately from the sale of the solar energy system. All costs to obtain and fulfill contracts associated with System Sales and other product sales are expensed as a cost of revenue when we have fulfilled our performance obligation and the products have been placed into service or delivered to the customer.

Lease Pass-Through Arrangement

We have assessed the impact of Topic 606 as it relates to the sales of ITCs through our lease pass-through arrangement. We have concluded that revenue related to the sale of ITCs through our lease pass-through arrangement is recognized when the related solar energy systems are placed in service as we have completed our performance obligation to transfer ITCs to the fund investors at that time.

Solar Energy Systems, Net

Solar energy systems are stated at cost, less accumulated depreciation and amortization. Solar energy systems, net is comprised of system equipment costs and initial direct costs related to solar energy systems subject to PPAs or Solar Leases. Systems that are sold to customers through System Sales are not part of solar energy systems, net. System equipment costs include components such as solar panels, inverters, racking systems and other electrical equipment, as well as costs for design and installation activities once a long-term customer contract has been executed. Initial direct costs related to solar energy systems consist of sales commissions and other direct customer acquisition expenses. System equipment costs and initial direct costs are capitalized and recorded within solar energy systems, net.

Depreciation and amortization is calculated using the straight-line method over the estimated useful lives of the respective assets as follows:

	<u>Useful Lives</u>
System equipment costs	30 years
Initial direct costs related to solar energy systems	Lease term (20 years)

We commence depreciation of our solar energy systems once the respective systems have been installed, interconnected to the power grid and received permission to operate. The determination of the useful lives of assets included within solar energy systems involves significant judgment on the part of management.

Impairment of Long-Lived Assets

The carrying amounts of our long-lived assets, including solar energy systems, property and equipment and finite-lived intangible assets are periodically reviewed for impairment whenever events or changes in circumstances indicate that the carrying value of these assets may not be recoverable or that the useful life is shorter than originally estimated. Factors that we consider in deciding when to perform an impairment review include significant negative industry or economic trends and significant changes or planned changes in our use of the assets. Recoverability of these assets is measured by comparison of the carrying amount of each asset to the future undiscounted cash flows the asset is expected to generate over its remaining useful life. If the asset is considered to be impaired, the amount of any impairment is measured as the difference between the carrying value and the fair value of the impaired asset. If the useful life is shorter than originally estimated, we amortize the remaining carrying value over the new shorter useful life.

Stock-Based Compensation

Stock-based compensation expense for equity instruments issued to employees is measured based on the grant-date fair value of the awards. The fair value of each restricted stock unit award and performance share unit award is determined as the closing price of the Company's stock on the date of grant. The fair value of each time-based employee stock option is estimated on the date of grant using the Black-Scholes-Merton stock option pricing valuation model. We recognize compensation costs using the accelerated attribution method for all employee stock-based compensation awards over the requisite service period of the awards, which is generally the awards' vesting period.

Stock-based compensation expense for equity instruments issued to non-employees is recognized based on the estimated fair value of the equity instrument. The fair value of the non-employee awards is subject to remeasurement at each reporting period until services required under the arrangement are completed, which is the vesting date.

Use of the Black-Scholes-Merton option-pricing model requires the input of highly subjective assumptions, including (1) the expected term of the option, (2) the expected volatility of the price of our common stock, (3) risk-free interest rates and (4) the expected dividend yield of our common stock. The assumptions used in the option-pricing model represent our best estimates. These estimates involve inherent uncertainties and the application of our judgment. If factors change and different assumptions are used, our stock-based compensation expense could be materially different in the future.

Provision for Income Taxes

We account for income taxes under an asset and liability approach. Deferred income taxes are classified as long-term and reflect the impact of temporary differences between assets and liabilities recognized for financial reporting purposes and amounts recognized for income tax reporting purposes, net operating loss carryforwards, and other tax credits measured by applying currently enacted tax laws. A valuation allowance is provided when necessary to reduce deferred tax assets to an amount that is more likely than not to be realized. As required by ASC 740, we recognize the effect of tax rate and law changes on deferred taxes in the reporting period in which the legislation is enacted.

We sell solar energy systems to investment funds for income tax purposes. As the investment funds are consolidated by us, the gain on the sale of the solar energy systems is eliminated in the consolidated financial statements. However, this gain is recognized for tax reporting purposes. We adopted ASU 2016-16, *Income Taxes (Topic 740): Intra-Entity Transfers of Assets Other Than Inventory*, or ASU 2016-16, effective January 1, 2018 using the modified retrospective method. With the adoption of ASU 2016-16, we now account for the income tax consequences of these intra-entity transfers, both current and deferred, as a component of income tax expense and deferred tax liability, net during the period in which the transfers occur.

We determine whether a tax position is more likely than not to be sustained upon examination, including resolution of any related appeals or litigation processes, based on the technical merits of the position. We use a two-step approach to recognize and measure uncertain tax positions. The first step is to evaluate the tax position for recognition by determining if the weight of available evidence indicates that it is more likely than not that the position will be sustained upon tax authority examination, including resolution of related appeals or litigation processes, if any. The second step is to measure the tax benefit as the largest amount that is more than 50% likely of being realized upon ultimate settlement.

Our policy is to include interest and penalties related to unrecognized tax benefits, if any, within income tax expense (benefit).

Derivative Financial Instruments

We maintain interest rate swaps as required by the terms of our debt agreements. The interest rate swaps related to the Solar Asset Backed Notes, Series 2018-2 are designated as cash flow hedges. Changes in the fair value of these cash flow hedges are recorded in other comprehensive (loss) income, or OCI, and will subsequently be reclassified to interest expense over the life of the related debt facility as interest payments are made. As interest payments for the associated debt agreement and derivatives are recognized, we include the effect of these payments in cash flows from operating activities within the consolidated statements of cash flows. The interest rate swaps related to the Aggregation Facility are not designated as hedge instruments, and any changes in fair value are accounted for in other (income) expense, net. Derivative instruments may be offset under master netting arrangements.

We adopted ASU 2017-12, *Derivatives and Hedging (Topic 815): Targeted Improvements to Accounting for Hedging Activities*, or ASU 2017-12, effective January 1, 2018. This update made targeted improvements to accounting for hedging activities by simplifying certain documentation and assessment requirements and eliminating the requirement to separately measure and report hedge ineffectiveness. We applied this update using a modified retrospective method to eliminate the separate measurement of hedge ineffectiveness by recording a cumulative-effect adjustment to retained earnings as of January 1, 2018.

Loss Contingencies

We are subject to the possibility of various loss contingencies arising in the ordinary course of business. We consider the likelihood of loss or impairment of an asset, or the incurrence of a liability, as well as our ability to reasonably estimate the amount of loss, in determining loss contingencies. We accrue an estimated loss contingency when it is probable that an asset has been impaired or a liability has been incurred and the amount of loss can be reasonably estimated. We regularly evaluate current information available to determine whether an accrual is required or should be adjusted or whether a range of possible loss should be disclosed.

Non-Controlling Interests and Redeemable Non-Controlling Interests

Non-controlling interests and redeemable non-controlling interests represent fund investors' interests in the net assets of certain consolidated investment funds that we have entered into in order to finance the costs of solar energy systems under long-term customer contracts. We have determined that the provisions in the contractual arrangements of the investment funds represent substantive profit-sharing arrangements, which give rise to the non-controlling interests and redeemable non-controlling interests. We have further determined that the appropriate methodology for attributing income and loss to the non-controlling interests and redeemable non-controlling interests each period is a balance sheet approach using the HLBV method. Under the HLBV method, the amounts of income and loss attributed to the non-controlling interests and redeemable non-controlling interests in the consolidated statements of operations reflect changes in the amounts the fund investors would hypothetically receive at each balance sheet date under the liquidation provisions of the contractual agreements for these structures, assuming the net assets of these funding structures were liquidated at recorded amounts. The fund investors' non-controlling interests in the results of operations of these funding structures are determined as the difference in the non-controlling interests' and redeemable non-controlling interests' claims under the HLBV method at the start and end of each reporting period, after considering any capital transactions, such as contributions or distributions, between the fund and the fund investors.

Attributing income and loss to the non-controlling interests and redeemable non-controlling interests under the HLBV method requires the use of significant assumptions and estimates to calculate the amounts that fund investors would receive upon a hypothetical liquidation. Changes in these assumptions and estimates can have a significant impact on the amount that fund investors would receive upon a hypothetical liquidation. The use of the HLBV methodology to allocate income to the non-controlling and redeemable non-controlling interest holders may create volatility in our consolidated statements of operations as the application of HLBV can drive changes in net income available and loss attributable to non-controlling interests and redeemable non-controlling interests from quarter to quarter.

We classify certain non-controlling interests with redemption features that are not solely within our control outside of permanent equity on our consolidated balance sheets. Estimated redemption value is calculated as the discounted cash flows subsequent to the expected flip date of the respective investment funds. Redeemable non-controlling interests are reported using the greater of their carrying value at each reporting date as determined by the HLBV method or their estimated redemption value in each reporting period. Estimating the redemption value of the redeemable non-controlling interests requires the use of significant assumptions and estimates. Changes in these assumptions and estimates can have a significant impact on the calculation of the redemption value.

Liquidity and Capital Resources

As of December 31, 2018, we had cash and cash equivalents of \$219.6 million, which consisted principally of cash and time deposits with high-credit-quality financial institutions. As discussed in Note 10—Debt Obligations and Note 12—Investment Funds, we do not have full access to a portion of our cash and cash equivalents. We finance our operations primarily from investment fund arrangements that we have formed with fund investors, from borrowings, and from cash inflows from operations.

Our principal uses of cash are funding our operations, including the costs of acquisition and installation of solar energy systems, working capital requirements and the satisfaction of our obligations under our debt instruments. Our business model requires substantial outside financing arrangements to grow the business and facilitate the deployment of additional solar energy systems. While there can be no assurances, we anticipate raising additional required capital from new and existing fund investors, additional borrowings, cash from System Sales and other potential financing vehicles.

We may seek to raise financing through the sale of equity, equity-linked securities, additional borrowings or other financing vehicles. Additional equity or equity-linked financing may be dilutive to our stockholders. If we raise funding through additional borrowings, such borrowings would have rights that are senior to holders of our equity securities and could contain covenants that restrict our operations. We believe our cash and cash equivalents, including our investment fund commitments, projected investment fund contributions and our current debt facilities as further described below, in addition to financing that we may obtain from other sources, including our financial sponsors, will be sufficient to meet our anticipated cash needs for at least the next 12 months. However, if we are unable to secure additional financing when needed, or upon desirable terms, we may be unable to finance installation of our customers' systems in a manner consistent with our past performance, our cost of capital could increase, or we may be required to significantly reduce the scope of our operations, any of which would have a material adverse effect on our business, financial condition, results of operations and prospects. In addition, our investment funds and debt instruments impose restrictions on our ability to draw on financing commitments. If we are unable to satisfy such conditions, we may incur penalties for non-performance under certain investment funds, experience installation delays, or be unable to make installations in accordance with our plans or at all. Any of these factors could also impact customer satisfaction, our business, operating results, prospects and financial condition. While we believe additional financing is available and will continue to be available to support our current level of operations, we believe we have the ability and intent to reduce operations to the level of available financial resources for at least the next 12 months, if necessary.

Sources of Funds

Investment Fund Commitments

As of February 28, 2019, we had raised 25 investment funds to which investors such as banks and other large financial investors have committed to invest approximately \$1.9 billion. The undrawn committed capital for these funds as of February 28, 2019 was approximately \$176 million, which we estimate will fund approximately 86 megawatts of future deployments.

Debt Instruments

Debt obligations consisted of the following as of December 31, 2018 (in thousands, except interest rates):

	Principal Borrowings Outstanding	Unused Borrowing Capacity	Interest Rate	Maturity Date
Solar asset backed notes, Series 2018-1 (1)	\$ 462,826	\$ —	5.1%	October 2028
Solar asset backed notes, Series 2018-2 (2)(3)	342,833	—	5.4	August 2023
2017 Term loan facility	188,922	—	6.0	January 2035
Forward flow loan facility	58,425	71,575	5.2	(4)
Credit agreement	1,283	—	6.5	February 2023
Revolving lines of credit				
Aggregation facility	50,000	325,000	5.7	September 2020
Working capital facility (5)	136,100	—	5.6	March 2020
Total debt	\$ 1,240,389	\$ 396,575		

- (1) The interest rate disclosed in the table above is a weighted-average rate. The Series 2018-1 Notes are comprised of Class A and Class B Notes. Class A Notes accrue interest at 4.73%. Class B Notes accrue interest at 7.37%.
- (2) The Series 2018-2 Notes are comprised of Class A and Class B Notes. Class B Notes accrue interest at a rate of LIBOR plus 4.75%. Class A Notes accrue interest at a variable spread over LIBOR that results in a weighted average spread for all 2018-2 Notes of 2.95%.
- (3) The interest rate of this facility is partially hedged to an effective interest rate of 6.0% for \$326.8 million of the principal borrowings. See Note 11—Derivative Financial Instruments.
- (4) The maturity date for this facility is 20 years from the end date of the borrowing availability period when all borrowings are aggregated into one term loan, which will be no later than October 31, 2019.
- (5) Facility is recourse debt, which refers to debt that is collateralized by our general assets. All of our other debt obligations are non-recourse, which refers to debt that is only collateralized by specified assets or our subsidiaries.

See Note 10—Debt Obligations for additional details regarding the debt facilities outstanding at December 31, 2018.

Revenue from Operations

In the year ended December 31, 2018, we generated \$174.1 million in revenue from operating leases and incentives, which approximates cash inflow. Cash related to our System Sales is generally received prior to revenue recognition and during 2018 we received \$114.4 million related to System Sales. The cash from our revenue partially offsets the cash used in operations for the period.

Uses of Funds

Our principal uses of cash are funding our operations, including the costs of acquisition and installation of solar energy systems, satisfaction of our obligations under our debt instruments and other working capital requirements. From time to time, we also reimburse portions of fund investors' capital as a result of delays in the installation process and interconnection to the power grid of solar energy systems and other factors. We expect our capital expenditures to continue to increase as we continue to install additional solar energy systems. We will need to raise financing to support our operations, and such financing may not be available to us on acceptable terms, or at all.

Historical Cash Flows

The following table summarizes our cash flows for the periods indicated:

	Year Ended December 31,	
	2018	2017
Net cash (used in) provided by:	(In thousands)	
Operating activities	\$ (45,655)	\$ (33,854)
Investing activities	(329,103)	(271,175)
Financing activities	510,716	336,528
Net increase in cash and cash equivalents, including restricted amounts	<u>\$ 135,958</u>	<u>\$ 31,499</u>

Operating Activities

In 2018, we had a net cash outflow from operations of \$45.7 million. This was primarily due to outflows of \$70.1 million from our net loss excluding noncash and non-operating items and \$24.4 million of inflows from changes in working capital.

Investing Activities

In 2018, we used \$329.1 million in investing activities primarily due to \$331.7 million in costs associated with the design, acquisition and installation of solar energy systems. These outflows were partially offset by \$3.4 million in proceeds from disposals of solar energy systems and property and equipment.

Financing Activities

In 2018, we generated \$510.7 million from financing activities, of which \$984.4 million represented proceeds from long-term debt and \$300.7 million represented proceeds from investments by non-controlling interests and redeemable non-controlling interests received by our investment funds. These proceeds were partially offset by repayments of long-term debt of \$700.1 million, distributions to non-controlling interests and redeemable non-controlling interests of \$54.7 million and payments for offering costs of \$21.2 million.

Contractual Obligations

Our contractual commitments and obligations were as follows as of December 31, 2018:

	Payments Due by Period ⁽¹⁾				
	Less than 1 Year	1-3 Years	3-5 Years	More than 5 Years	Total
			(In thousands)		
Long-term debt	\$ 12,450	\$ 214,084	\$ 375,720	\$ 638,135	\$ 1,240,389
Interest payments related to long-term debt ⁽²⁾	68,529	117,911	103,594	167,755	457,789
Distributions payable to non-controlling interests and redeemable non-controlling interests ⁽³⁾	7,846	—	—	—	7,846
Capital lease obligations and interest	2,069	490	32	—	2,591
Operating lease obligations	11,250	23,472	19,493	63,762	117,977
Total	<u>\$ 102,144</u>	<u>\$ 355,957</u>	<u>\$ 498,839</u>	<u>\$ 869,652</u>	<u>\$ 1,826,592</u>

- (1) Does not include amounts related to redeemable put options held by fund investors. The redemption price for the fund investors' interest in the respective fund is equal to the sum of: (1) any unpaid, accrued priority return, and (2) the greater of: (a) a fixed price and (b) the fair market value of such interest at the date the option is exercised. Due to uncertainties associated with estimating the timing and amount of the redemption price, we cannot determine the potential future payments that we could have to make under these redemption options. For additional information regarding the redeemable put options, see Note 13—Redeemable Non-Controlling Interests and Equity and Preferred Stock to our consolidated financial statements. As of December 31, 2018, all fund investors have contributed an aggregate of \$1,565.3 million into the funds. For additional information regarding our investment funds, see Note 12—Investment Funds to our consolidated financial statements.
- (2) Interest payments related to long-term debt are calculated and estimated for the periods presented based on the amount of debt outstanding and the interest rates as of December 31, 2018.
- (3) Does not include any potential contractual obligations that may arise as a result of the contractual guarantees we have made with certain investors in our investment funds. The amounts of any potential payments we may be required to make depend on the amount and timing of future distributions to the relevant fund investors and the ITCs that accrue to such investors from the funds' activities. Due to uncertainties associated with estimating the timing and amounts of distributions and likelihood of an event that may trigger repayment of any forfeiture or recapture of ITCs to such investors, we cannot determine the potential maximum future payments that we could have to make under these guarantees. As a result of these guarantees, as of December 31, 2018, we were required to hold a minimum balance of \$10.0 million in the aggregate, which is classified as restricted cash and cash equivalents on our consolidated balance sheet. For additional information, see Note 12—Investment Funds to our consolidated financial statements.

Off-Balance Sheet Arrangements

We include in our consolidated financial statements all assets and liabilities and results of operations of investment fund arrangements that we have entered into. We do not have any off-balance sheet arrangements.

Recent Accounting Pronouncements

For a description of recent accounting pronouncements that will impact us, see Note 2—Summary of Significant Accounting Policies.

Emerging Growth Company Status

Section 107 of the JOBS Act provides that an emerging growth company can take advantage of the extended transition period provided in Section 7(a)(2)(B) of the Securities Act for complying with new or revised accounting standards. In other words, an emerging growth company can delay the adoption of certain accounting standards until those standards would otherwise apply to private companies. We have irrevocably elected not to avail ourselves of this exemption from new or revised accounting standards and, therefore, we will be subject to the same new or revised accounting standards as other public companies that are not emerging growth companies.

Item 7A. Quantitative and Qualitative Disclosures About Market Risk.

We are not required to provide the information required by this Item 7A as we are a smaller reporting company.

Item 8. Financial Statements and Supplementary Data.

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Report of Independent Registered Public Accounting Firm

To the Shareholders and the Board of Directors of Vivint Solar, Inc.

Opinion on the Financial Statements

We have audited the accompanying consolidated balance sheets of Vivint Solar, Inc. (the Company) as of December 31, 2018 and 2017, the related consolidated statements of operations, comprehensive (loss) income, redeemable non-controlling interests and equity and cash flows for each of the two years in the period ended December 31, 2018, and the related notes (collectively referred to as the “consolidated financial statements”). In our opinion, the consolidated financial statements present fairly, in all material respects, the financial position of the Company at December 31, 2018 and 2017, and the results of its operations and its cash flows for each of the two years in the period ended December 31, 2018, in conformity with U.S. generally accepted accounting principles.

Basis for Opinion

These financial statements are the responsibility of the Company’s management. Our responsibility is to express an opinion on the Company’s financial statements based on our audits. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) (PCAOB) and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement, whether due to error or fraud. The Company is not required to have, nor were we engaged to perform, an audit of its internal control over financial reporting. As part of our audits we are required to obtain an understanding of internal control over financial reporting but not for the purpose of expressing an opinion on the effectiveness of the Company’s internal control over financial reporting. Accordingly, we express no such opinion.

Our audits included performing procedures to assess the risks of material misstatement of the financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the financial statements. We believe that our audits provide a reasonable basis for our opinion.

/s/ Ernst & Young LLP

We have served as the Company’s auditor since 2012.

Salt Lake City, Utah
March 5, 2019

Vivint Solar, Inc.
Consolidated Balance Sheets
(In thousands, except par value and footnote 1)

	<u>December 31, 2018</u>	<u>December 31, 2017</u>
ASSETS		
Current assets:		
Cash and cash equivalents	\$ 219,591	\$ 108,452
Accounts receivable, net	14,207	19,665
Inventories	13,257	22,597
Prepaid expenses and other current assets	31,201	34,049
Total current assets	278,256	184,763
Restricted cash and cash equivalents	71,305	46,486
Solar energy systems, net	1,938,874	1,673,532
Property and equipment, net	10,730	15,078
Prepaid tax asset, net	—	505,883
Other non-current assets, net	28,090	38,187
TOTAL ASSETS (1)	\$ 2,327,255	\$ 2,463,929
LIABILITIES, REDEEMABLE NON-CONTROLLING INTERESTS AND EQUITY		
Current liabilities:		
Accounts payable	\$ 45,929	\$ 40,899
Distributions payable to non-controlling interests and redeemable non-controlling interests	7,846	16,437
Accrued compensation	25,520	20,992
Current portion of long-term debt	12,155	13,585
Current portion of deferred revenue	30,199	41,846
Current portion of capital lease obligation	1,921	4,166
Accrued and other current liabilities	42,860	29,675
Total current liabilities	166,430	167,600
Long-term debt, net of current portion	1,203,282	925,964
Deferred revenue, net of current portion	13,524	29,200
Capital lease obligation, net of current portion	505	1,599
Deferred tax liability, net	437,120	342,382
Other non-current liabilities	24,610	13,674
Total liabilities (1)	1,845,471	1,480,419
Commitments and contingencies (Note 17)		
Redeemable non-controlling interests	119,572	122,444
Stockholders' equity:		
Common stock, \$0.01 par value—1,000,000 authorized, 120,114 shares issued and outstanding as of December 31, 2018; 1,000,000 authorized, 115,099 shares issued and outstanding as of December 31, 2017	1,201	1,151
Additional paid-in capital	574,248	559,788
Accumulated other comprehensive (loss) income	(7,223)	6,905
(Accumulated deficit) retained earnings	(279,631)	213,107
Total stockholders' equity	288,595	780,951
Non-controlling interests	73,617	80,115
Total equity	362,212	861,066
TOTAL LIABILITIES, REDEEMABLE NON-CONTROLLING INTERESTS AND EQUITY	\$ 2,327,255	\$ 2,463,929

(1) The Company's consolidated assets as of December 31, 2018 and 2017 include \$1,835.8 million and \$1,516.2 million consisting of assets of variable interest entities ("VIEs") that can only be used to settle obligations of the VIEs. These assets include solar energy systems, net, of \$1,752.3 million and \$1,486.0 million as of December 31, 2018 and 2017; cash and cash equivalents of \$62.4 million and \$17.3 million as of December 31, 2018 and 2017; accounts receivable, net, of \$6.6 million and \$5.1 million as of December 31, 2018 and 2017; other non-current assets, net of \$10.9 million and \$6.8 million as of December 31, 2018 and 2017; restricted cash and cash equivalents of \$2.4 million and \$0 as of December 31, 2018 and 2017; and prepaid expenses and other current assets of \$1.3 million and \$1.0 million as of December 31, 2018 and 2017. The Company's consolidated liabilities as of December 31, 2018 and 2017 included \$80.8 million and \$58.4 million of liabilities of VIEs whose creditors have no recourse to the Company. These liabilities include long-term debt of \$55.0 million and \$0 as of December 31, 2018 and 2017; deferred revenue of \$12.0 million and \$36.0 million as of December 31, 2018 and 2017; distributions payable to non-controlling interests and redeemable non-controlling interests of \$7.8 million and \$16.4 million as of December 31, 2018 and 2017; accrued and other current liabilities of \$4.9 million and \$4.5 million as of December 31, 2018 and 2017; and other non-current liabilities of \$1.0 million and \$1.4 million as of December 31, 2018 and 2017. For further information see Note 12—Investment Funds.

See accompanying notes to consolidated financial statements.

Vivint Solar, Inc.
Consolidated Statements of Operations
(In thousands, except per share data)

	Year Ended December 31,	
	2018	2017
Revenue:		
Operating leases and incentives	\$ 174,066	\$ 150,862
Solar energy system and product sales	116,255	117,166
Total revenue	<u>290,321</u>	<u>268,028</u>
Cost of revenue:		
Cost of revenue—operating leases and incentives	164,920	141,305
Cost of revenue—solar energy system and product sales	83,375	88,977
Total cost of revenue	<u>248,295</u>	<u>230,282</u>
Gross profit	42,026	37,746
Operating expenses:		
Sales and marketing	58,950	38,696
Research and development	1,867	3,340
General and administrative	93,703	79,957
Total operating expenses	<u>154,520</u>	<u>121,993</u>
Loss from operations	(112,494)	(84,247)
Interest expense, net	65,308	64,264
Other (income) expense, net	(4,538)	352
Loss before income taxes	(173,264)	(148,863)
Income tax expense (benefit)	106,299	(157,333)
Net (loss) income	(279,563)	8,470
Net loss attributable to non-controlling interests and redeemable non-controlling interests	(263,971)	(200,628)
Net (loss attributable) income available to common stockholders	<u>\$ (15,592)</u>	<u>\$ 209,098</u>
Net (loss attributable) income available per share to common stockholders:		
Basic	<u>\$ (0.13)</u>	<u>\$ 1.85</u>
Diluted	<u>\$ (0.13)</u>	<u>\$ 1.77</u>
Weighted-average shares used in computing net (loss attributable) income available per share to common stockholders:		
Basic	<u>117,565</u>	<u>113,132</u>
Diluted	<u>117,565</u>	<u>118,268</u>

See accompanying notes to consolidated financial statements.

Vivint Solar, Inc.

Consolidated Statements of Comprehensive (Loss) Income
(In thousands)

	Year Ended December 31,	
	2018	2017
Net (loss) income available to common stockholders	\$ (15,592)	\$ 209,098
Other comprehensive loss:		
Unrealized losses on cash flow hedging instruments (net of tax effect of \$(606) and \$(562) in 2018 and 2017)	(1,705)	(843)
Less: Interest income on derivatives recognized into earnings (net of tax effect of \$5,860 and \$78 in 2018 and 2017)	15,741	117
Total other comprehensive loss	(17,446)	(726)
Comprehensive (loss) income	\$ (33,038)	\$ 208,372

See accompanying notes to consolidated financial statements.

Vivint Solar, Inc.

Consolidated Statements of Redeemable Non-Controlling Interests and Equity
(In thousands)

	Redeemable Non- Controlling Interests	Common Stock		Additional Paid-in Capital	Accumulated Other Comprehensive (Loss) Income	Retained Earnings (Accumulated Deficit)	Total Stockholders' Equity	Non- Controlling Interests	Total Equity
		Shares	Amount						
Balance — January 1, 2017	\$ 129,676	110,245	\$ 1,102	\$ 542,348	\$ 7,631	\$ 5,217	\$ 556,298	\$ 110,536	\$ 666,834
Cumulative-effect adjustment from adoption of new ASUs	—	—	—	2,014	—	(1,208)	806	—	806
Stock-based compensation expense	—	—	—	12,917	—	—	12,917	—	12,917
Issuance of common stock, net	—	4,854	49	588	—	—	637	—	637
Contributions from non-controlling interests and redeemable non-controlling interests	65,062	—	—	—	—	—	—	148,666	148,666
Distributions to non-controlling interests and redeemable non-controlling interests	(7,566)	—	—	—	—	—	—	(39,984)	(39,984)
Acquisition of redeemable non-controlling interests	(3,203)	—	—	1,921	—	—	1,921	—	1,921
Total other comprehensive loss	—	—	—	—	(726)	—	(726)	—	(726)
Net (loss) income	(61,525)	—	—	—	—	209,098	209,098	(139,103)	69,995
Balance — December 31, 2017	<u>122,444</u>	<u>115,099</u>	<u>1,151</u>	<u>559,788</u>	<u>6,905</u>	<u>213,107</u>	<u>780,951</u>	<u>80,115</u>	<u>861,066</u>
Cumulative-effect adjustment from adoption of new ASUs	—	—	—	—	3,318	(477,146)	(473,828)	—	(473,828)
Stock-based compensation expense	—	—	—	13,163	—	—	13,163	—	13,163
Issuance of common stock, net	—	5,015	50	1,297	—	—	1,347	—	1,347
Contributions from non-controlling interests and redeemable non-controlling interests	79,354	—	—	—	—	—	—	221,388	221,388
Distributions to non-controlling interests and redeemable non-controlling interests	(9,813)	—	—	—	—	—	—	(36,328)	(36,328)
Total other comprehensive loss	—	—	—	—	(17,446)	—	(17,446)	—	(17,446)
Net loss	(72,413)	—	—	—	—	(15,592)	(15,592)	(191,558)	(207,150)
Balance — December 31, 2018	<u>\$ 119,572</u>	<u>120,114</u>	<u>\$ 1,201</u>	<u>\$ 574,248</u>	<u>\$ (7,223)</u>	<u>\$ (279,631)</u>	<u>\$ 288,595</u>	<u>\$ 73,617</u>	<u>\$ 362,212</u>

See accompanying notes to consolidated financial statements.

Vivint Solar, Inc.
Consolidated Statements of Cash Flows
(In thousands)

	Year Ended December 31,	
	2018	2017
CASH FLOWS FROM OPERATING ACTIVITIES:		
Net (loss) income	\$ (279,563)	\$ 8,470
Adjustments to reconcile net (loss) income to net cash used in operating activities:		
Depreciation and amortization	69,634	61,164
Deferred income taxes	106,862	(52,828)
Stock-based compensation	13,163	12,917
Loss on solar energy systems and property and equipment	7,400	6,858
Non-cash interest and other expense	17,006	9,422
Reduction in lease pass-through financing obligation	(4,433)	(4,515)
(Gains) losses on interest rate swaps	(148)	359
Changes in operating assets and liabilities:		
Accounts receivable, net	5,458	(7,007)
Inventories	9,340	(11,312)
Prepaid expenses and other current assets	2,805	10,864
Prepaid tax asset, net	—	(86,409)
Other non-current assets, net	(7,828)	(5,502)
Accounts payable	1,898	(285)
Accrued compensation	4,762	495
Deferred revenue	(926)	16,756
Accrued and other liabilities	8,915	6,699
Net cash used in operating activities	<u>(45,655)</u>	<u>(33,854)</u>
CASH FLOWS FROM INVESTING ACTIVITIES:		
Payments for the cost of solar energy systems	(331,716)	(276,651)
Payments for property and equipment	(766)	(672)
Proceeds from disposals of solar energy systems and property and equipment	3,379	2,428
Proceeds from state tax credits	—	3,720
Net cash used in investing activities	<u>(329,103)</u>	<u>(271,175)</u>
CASH FLOWS FROM FINANCING ACTIVITIES:		
Proceeds from investment by non-controlling interests and redeemable non-controlling interests	300,742	213,728
Distributions paid to non-controlling interests and redeemable non-controlling interests	(54,732)	(47,289)
Proceeds from long-term debt	984,425	356,750
Payments on long-term debt	(700,143)	(172,495)
Payments for offering costs	(21,209)	(13,917)
Proceeds from lease pass-through financing obligation	3,609	3,581
Principal payments on capital lease obligations	(3,323)	(4,467)
Proceeds from issuance of common stock	1,347	637
Net cash provided by financing activities	<u>510,716</u>	<u>336,528</u>
NET INCREASE IN CASH AND CASH EQUIVALENTS, INCLUDING RESTRICTED AMOUNTS	135,958	31,499
CASH AND CASH EQUIVALENTS, INCLUDING RESTRICTED AMOUNTS—Beginning of period	154,938	123,439
CASH AND CASH EQUIVALENTS, INCLUDING RESTRICTED AMOUNTS—End of period	<u>\$ 290,896</u>	<u>\$ 154,938</u>
SUPPLEMENTAL DISCLOSURES OF CASH FLOW INFORMATION:		
Cash paid for interest, net	\$ 42,928	\$ 51,127
Cash recovered from income taxes, net	\$ (11,194)	\$ (33,245)
NONCASH INVESTING AND FINANCING ACTIVITIES:		
Accrued distributions to non-controlling interests and redeemable non-controlling interests	\$ (8,591)	\$ 261
Costs of solar energy systems included in changes in accounts payable, accounts payable—related party, accrued compensation and accrued and other liabilities	\$ 8,503	\$ 610
Vehicles acquired under capital leases	\$ 1,622	\$ 874
Receivable for tax credit recorded as a reduction to solar energy system costs	\$ 7	\$ 102

See accompanying notes to consolidated financial statements.

Notes to Consolidated Financial Statements

1. Organization

Vivint Solar, Inc. and its subsidiaries are collectively referred to as the “Company.” The Company most commonly offers solar energy to residential customers through long-term customer contracts, such as power purchase agreements (“PPAs”) and legal-form leases (“Solar Leases”). The Company also offers its customers the option to purchase solar energy systems (“System Sales”) through third-party loan offerings or a cash purchase. The Company enters into customer contracts through a sales organization that primarily uses a direct-to-home sales model. The long-term customer contracts under PPAs and Solar Leases are typically for 20 years and require the customer to make monthly payments to the Company.

The Company has formed various investment funds and entered into long-term debt facilities to monetize the recurring customer payments under its long-term customer contracts and investment tax credits (“ITCs”), accelerated tax depreciation and other incentives associated with residential solar energy systems. The Company uses the cash received from the investment funds, long-term debt facilities and cash generated from operations, including System Sales, to finance a portion of the Company’s variable and fixed costs associated with installing solar energy systems.

2. Summary of Significant Accounting Policies

Basis of Presentation and Principles of Consolidation

The accompanying consolidated financial statements have been prepared in accordance with U.S. generally accepted accounting principles (“GAAP”) and applicable rules and regulations of the Securities and Exchange Commission (the “SEC”) and reflect the accounts and operations of the Company, its subsidiaries in which the Company has a controlling financial interest and the investment funds formed to fund the purchase of solar energy systems under long-term customer contracts, which are consolidated as variable interest entities (“VIEs”). The Company uses a qualitative approach in assessing the consolidation requirement for VIEs. This approach focuses on determining whether the Company has the power to direct the activities of the VIE that most significantly affect the VIE’s economic performance and whether the Company has the obligation to absorb losses or the right to receive benefits that could potentially be significant to the VIE. All of these determinations involve significant management judgments. The Company has determined that it is the primary beneficiary in the operational VIEs in which it has an equity interest. The Company evaluates its relationships with the VIEs on an ongoing basis to ensure that it continues to be the primary beneficiary. All intercompany transactions and balances have been eliminated in consolidation. For additional information regarding these VIEs, see Note 12—Investment Funds.

Certain prior period amounts have been reclassified to conform to current year presentation. These reclassifications did not have a significant impact on the consolidated financial statements. On the consolidated balance sheets, intangible assets, net are now included within other non-current assets, net, and accounts payable—related party, which are not material, are now included within accounts payable. See Note 16—Related Party Transactions for additional information on related party transactions. On the consolidated statements of operations, amortization of intangible assets is now included within general and administrative expenses. On the consolidated statements of cash flows, amortization of intangible assets is now included within depreciation and amortization, the change in accounts payable—related party is now included within the change in accounts payable, the purchase of intangible assets is now included within payments for property and equipment, and the change in restricted cash has been removed as a result of adopting Accounting Standards Update (“ASU”) 2016-18.

Use of Estimates

The preparation of the consolidated financial statements requires management to make estimates and assumptions that affect the amounts reported in the consolidated financial statements and accompanying notes. The Company regularly makes significant estimates and assumptions including, but not limited to, ITCs; revenue recognition; solar energy systems, net; the impairment analysis of long-lived assets; stock-based compensation; the provision for income taxes; the valuation of derivative financial instruments; the recognition and measurement of loss contingencies; and non-controlling interests and redeemable non-controlling interests. The Company bases its estimates on historical experience and on various other assumptions believed to be reasonable, the results of which form the basis for making judgments about the carrying values of assets and liabilities. Actual results could differ materially from those estimates.

Cash and Cash Equivalents

The Company considers all highly liquid investments with maturities of three months or less at the time of purchase to be cash and cash equivalents. Cash equivalents consist principally of time deposits and money market accounts with high quality financial institutions.

Restricted Cash

The Company's guaranty agreements with certain of its fund investors require the maintenance of minimum cash balances of \$10.0 million. For additional information, see Note 12—Investment Funds. As of December 31, 2018, the Company also had \$61.3 million in required reserves outstanding in separate collateral accounts in accordance with the terms of its various debt obligations. For additional information, see Note 10—Debt Obligations. These minimum cash balances are classified as restricted cash.

The Company adopted ASU 2016-18, *Statement of Cash Flows (Topic 230): Restricted Cash (a consensus of the FASB Emerging Issues Task Force)* ("ASU 2016-18"), effective January 1, 2018. This update clarified that transfers between cash and restricted cash are not reported as cash flow activities in the statements of cash flows. As such, restricted cash amounts are included with cash and cash equivalents in the beginning-of-period and end-of-period total amounts on the statements of cash flows. The Company applied this update retrospectively, which resulted in an adjustment to the beginning-of-period and end-of-period total amounts on the consolidated statement of cash flows for the year ended December 31, 2017 to include restricted cash balances from those periods.

Liquidity

In order to grow, the Company requires cash to finance the deployment of solar energy systems. As of the date of this filing, the Company will require additional sources of cash beyond current cash balances, and currently available financing facilities to fund long-term planned growth. If the Company is unable to secure additional financing when needed, or upon desirable terms, the Company may be unable to finance installation of customers' systems in a manner consistent with past performance, cost of capital could increase, or the Company may be required to significantly reduce the scope of operations, any of which would have a material adverse effect on the business, financial condition, results of operations and prospects. While the Company believes additional financing is available and will continue to be available to support current levels of operations, the Company believes it has the ability and intent to reduce operations to the level of available financial resources for at least the next 12 months from the date of this report, if necessary.

Accounts Receivable, Net

Accounts receivable are recorded at the invoiced amount, net of allowance for doubtful accounts. Accounts receivable also include unbilled accounts receivable, which is composed of the monthly PPA power generation not yet invoiced and the monthly bill rate of Solar Leases as of the end of the reporting period. The Company estimates its allowance for doubtful accounts based upon the collectability of the receivables in light of historical trends and adverse situations that may affect customers' ability to pay. Revisions to the allowance are recorded as an adjustment to bad debt expense or as a reduction to revenue when collectability is not reasonably assured. After appropriate collection efforts are exhausted, specific accounts receivable deemed to be uncollectible would be charged against the allowance in the period they are deemed uncollectible. Recoveries of accounts receivable previously written-off are recorded as credits to bad debt expense. The Company had an allowance for doubtful accounts of \$5.2 million and \$3.6 million as of December 31, 2018 and 2017.

Inventories

Inventories include solar energy systems under construction that have yet to be interconnected to the power grid and that will be sold to customers. Inventory is stated at the lower of cost, on a first-in, first-out ("FIFO") basis, or net realizable value. Upon interconnection to the power grid, solar energy system inventory is removed using the specific identification method. Inventories also include components related to photovoltaic installation products and are stated at the lower of cost, on an average cost basis, or net realizable value. The Company evaluates its inventory reserves on a quarterly basis and writes down the value of inventories for estimated excess and obsolete inventories based on assumptions about future demand and market conditions. See Note 4—Inventories.

Concentrations of Risk

Financial instruments that potentially subject the Company to concentrations of credit risk consist primarily of cash and cash equivalents and accounts receivable. The associated concentration risk for cash and cash equivalents is mitigated by banking with creditworthy institutions. At certain times, amounts on deposit exceed Federal Deposit Insurance Corporation insurance limits. Approximately 39% of accounts receivable, net as of December 31, 2018 was due from three third-party loan providers that offer financing to System Sales customers. The Company does not require collateral or other security to support accounts receivable. The Company is not dependent on any single customer outside of the third-party loan providers.

The Company purchases solar panels, inverters and other system components from a limited number of suppliers. Three suppliers accounted for approximately 97% of the solar photovoltaic module purchases for the year ended December 31, 2018. Three suppliers accounted for approximately 99% of the Company's inverter purchases for the year ended December 31, 2018. If these suppliers fail to satisfy the Company's requirements on a timely basis or if the Company fails to develop, maintain and expand its relationship with these suppliers, the Company could suffer delays in being able to deliver or install its solar energy systems, experience a possible loss of revenue, or incur higher costs, any of which could adversely affect its operating results.

Megawatts installed in California accounted for approximately 38% and 31% of total megawatts installed for the years ended December 31, 2018 and 2017. Megawatts installed in the Northeastern United States accounted for approximately 32% and 35% of total megawatts installed for the years ended December 31, 2018 and 2017. Future operations could be affected by changes in the economic conditions in these and other geographic areas, by changes in materials costs, by changes in the demand for renewable energy generated by solar energy systems or by changes or eliminations of solar energy related government incentives.

Fair Value of Financial Instruments

Assets and liabilities recorded at fair value on a recurring basis in the consolidated balance sheets are categorized based upon the level of judgment associated with the inputs used to measure their fair values. Fair value is defined as the exchange price that would be received for an asset or an exit price that would be paid to transfer a liability in the principal or most advantageous market for the asset or liability in an orderly transaction between market participants on the measurement date. Valuation techniques used to measure fair value must maximize the use of observable inputs and minimize the use of unobservable inputs. The authoritative guidance on fair value measurements establishes a three-tier fair value hierarchy for disclosure of fair value measurements as follows:

- Level I—Inputs are unadjusted, quoted prices in active markets for identical assets or liabilities at the measurement date;
- Level II—Inputs are observable, unadjusted quoted prices in active markets for similar assets or liabilities, unadjusted quoted prices for identical or similar assets or liabilities in markets that are not active, or other inputs that are observable or can be corroborated by observable market data for substantially the full term of the related assets or liabilities; and
- Level III—Unobservable inputs that are significant to the measurement of the fair value of the assets or liabilities that are supported by little or no market data.

The Company's financial instruments measured on a recurring basis consist of Level II assets. See Note 3—Fair Value Measurements.

Investment Tax Credits (ITCs)

The Company applies for and receives ITCs under Section 48(a) of the Internal Revenue Code. The amount of the ITC is equal to 30% of the basis of eligible solar property. The Company receives all ITCs for solar energy systems that are not sold to customers or placed in its investment funds. The Company accounts for its ITCs as a reduction of income tax expense in the year in which the credits arise. The Company receives minimal allocations of ITCs for solar energy systems placed in its investment funds as the majority of such credits are allocated to the fund investors. Some of the Company's investment funds obligate it to make certain fund investors whole for losses that the investors may suffer in certain limited circumstances resulting from the disallowance or recapture of ITCs as a result of the Internal Revenue Service's (the "IRS") assessment of the fair value of such systems. The Company has concluded that the likelihood of a recapture event related to these assessments is remote and consequently has not recorded any liability in the consolidated financial statements for any potential recapture exposure.

Solar Energy Systems, Net

The Company sells energy to customers through PPAs or leases solar energy systems to customers through Solar Leases. The Company has determined that these contracts should be accounted for as operating leases and, accordingly, the related solar energy systems are stated at cost, less accumulated depreciation and amortization. The Company also sells solar energy systems to customers through System Sales. Systems that are sold to customers are not part of solar energy systems, net.

Solar energy systems, net is comprised of system equipment costs and initial direct costs related to solar energy systems subject to PPAs or Solar Leases. System equipment costs include components such as solar panels, inverters, racking systems and other electrical equipment, as well as costs for design and installation activities once a long-term customer contract has been executed. Initial direct costs related to solar energy systems consist of sales commissions and other direct customer acquisition expenses. System equipment costs and initial direct costs are capitalized and recorded within solar energy systems, net.

Depreciation and amortization is calculated using the straight-line method over the estimated useful lives of the respective assets as follows:

	<u>Useful Lives</u>
System equipment costs	30 years
Initial direct costs related to solar energy systems	Lease term (20 years)

System equipment costs are depreciated and initial direct costs are amortized once the respective systems have been installed, interconnected to the power grid and received permission to operate. The determination of the useful lives of assets included within solar energy systems involves significant management judgment. As of December 31, 2018 and 2017, the Company had recorded costs of \$2,134.8 million and \$1,803.2 million in solar energy systems, of which \$1,999.3 million and \$1,717.3 million related to systems that had been interconnected to the power grid, with accumulated depreciation and amortization of \$195.9 million and \$129.6 million.

Property and Equipment, Net

The Company's property and equipment is stated at cost less accumulated depreciation and amortization. Depreciation and amortization are calculated using the straight-line method over the estimated useful lives of the assets. Vehicles leased under capital leases are depreciated over the life of the lease term, which is typically three to five years. The estimated useful lives of computer equipment, furniture, fixtures and purchased software are three years. Leasehold improvements are amortized over the shorter of the lease term or the estimated useful lives of the assets. The estimated useful lives of leasehold improvements currently range from one to 12 years. Repairs and maintenance costs are expensed as incurred. Major renewals and improvements that extend the useful lives of existing assets would be capitalized and depreciated over their estimated useful lives.

Intangible Assets

The Company capitalizes costs incurred in the development of internal-use software during the application development stage. Costs related to preliminary project activities and post-implementation activities are expensed as incurred. Internal-use software is amortized on a straight-line basis over its estimated useful life. The Company tests these assets for impairment whenever events or changes in circumstances occur that could impact the recoverability of these assets. The Company recorded amortization for internal-use software of \$0.4 million for each of the years ended December 31, 2018 and 2017.

Other finite-lived intangible assets, which consist of developed technology acquired in business combinations, trademarks/trade names and customer relationships are initially recorded at fair value and presented net of accumulated amortization. These intangible assets are amortized on a straight-line basis over their estimated useful lives. The Company amortizes trademarks/trade names over 10 years and developed technology over eight years. The Company's customer relationships intangible asset was amortized over five years and became fully amortized in the year ended December 31, 2018. See Note 7—Intangible Assets.

Impairment of Long-Lived Assets

The carrying amounts of the Company's long-lived assets, including solar energy systems, property and equipment and finite-lived intangible assets are periodically reviewed for impairment whenever events or changes in circumstances indicate that the carrying value of these assets may not be recoverable or that the useful life is shorter than originally estimated. Factors that the Company considers in deciding when to perform an impairment review include significant negative industry or economic trends, and significant changes or planned changes in the Company's use of the assets. Recoverability of these assets is measured by comparison of the carrying amount of each asset to the future undiscounted cash flows the asset is expected to generate over its remaining life. If the asset is considered to be impaired, the amount of any impairment is measured as the difference between the carrying value and the fair value of the impaired asset. If the useful life is shorter than originally estimated, the Company amortizes the remaining carrying value over the new shorter useful life.

Other Non-Current Assets

Other non-current assets primarily consist of the long-term portion of lease incentive assets, prepaid insurance, advances receivable due from sales representatives, a straight-line lease asset, debt issuance costs and long-term refundable rent deposits. Lease incentives represent cash payments made by the Company to customers in order to finalize long-term customer contracts. The Company has acquired insurance policies to mitigate the risk of ITC recapture. The insurance premiums are being amortized on a straight-line basis over the policy period. The Company provides advance payments of compensation to direct-sales personnel under certain circumstances. The advance is repaid as a reduction of the direct-sales personnel's future compensation. The Company has established an allowance related to advances to direct-sales personnel who have terminated their employment agreement with the Company. These are non-interest-bearing advances. For Solar Lease agreements, the Company recognizes revenue on a straight-line basis over the lease term and records an asset that represents future customer payments expected to be received. Debt issuance costs represent costs incurred in connection with obtaining revolving debt financings and are deferred and amortized utilizing the straight-line method, which approximates the effective-interest method, over the term of the related financing.

Distributions Payable to Non-Controlling Interests and Redeemable Non-Controlling Interests

As discussed in Note 12—Investment Funds, the Company and fund investors have formed various investment funds that the Company consolidates as the Company has determined that it is the primary beneficiary in the operational VIEs in which it has an equity interest. These VIEs are required to pay cumulative cash distributions to their respective fund investors. The Company accrues amounts payable to fund investors in distributions payable to non-controlling interests and redeemable non-controlling interests.

Deferred Revenue

Deferred revenue primarily includes cash received in advance of revenue recognition related to System Sales and rebate incentives. A portion of the cash received for System Sales is attributable to administrative services and is deferred over the period that the administrative services are provided. The majority of the cash received for System Sales is deferred until the solar energy systems are interconnected to the local power grids and receive permission to operate. Rebate incentives are received from utility companies and various government agencies and are recognized as revenue over the related lease term of 20 years. See “— Revenue Recognition” for additional information regarding revenue.

Workmanship Accruals and Warranties

The Company typically warrants solar energy systems sold to customers for periods of one to ten years against defects in design and workmanship, and for periods of one to ten years that installations will remain watertight. The manufacturers' warranties on the solar energy system components, which are typically passed through to the customers, have typical product warranty periods of 10 to 20 years and a limited performance warranty period of 25 years. The Company warrants its photovoltaic installation devices for six months to one year against defects in materials or installation workmanship.

The Company generally assesses a loss contingency accrual for installation workmanship and provides for the estimated cost at the time that installation is completed. The Company assesses the workmanship accruals regularly and adjusts the amounts as necessary based on actual experience and changes in future estimates. The current portion of this accrual is recorded as a component of accrued and other current liabilities and was \$2.6 million and \$1.4 million as of December 31, 2018 and 2017. The non-current portion of this accrual is recorded as a component of other non-current liabilities and was \$3.9 million and \$2.1 million as of December 31, 2018 and 2017.

Derivative Financial Instruments

The Company maintains interest rate swaps as required by the terms of its debt agreements. See Note 10—Debt Obligations. The interest rate swaps related to the Solar Asset Backed Notes, Series 2018-2 are designated as cash flow hedges. Changes in the fair value of these cash flow hedges are recorded in other comprehensive (loss) income (“OCI”) and will subsequently be reclassified to interest expense over the life of the related debt facility as interest payments are made. As interest payments for the associated debt agreement and derivatives are recognized, the Company includes the effect of these payments in cash flows from operating activities within the consolidated statements of cash flows. The interest rate swaps related to the Aggregation Facility are not designated as hedge instruments and any changes in fair value are accounted for in other (income) expense, net. Derivative instruments may be offset under their master netting arrangements. See Note 11—Derivative Financial Instruments.

The Company adopted ASU 2017-12, *Derivatives and Hedging (Topic 815): Targeted Improvements to Accounting for Hedging Activities* (“ASU 2017-12”), effective January 1, 2018. This update made targeted improvements to accounting for hedging activities by simplifying certain documentation and assessment requirements and eliminating the requirement to separately measure and report hedge in effectiveness. The Company applied this update using a modified retrospective method to eliminate the separate measurement of hedge ineffectiveness by recording a cumulative-effect adjustment to retained earnings as of January 1, 2018. The net amount the Company recorded to retained earnings as a result of adopting ASU 2017-12 was approximately \$1.8 million.

Comprehensive (Loss) Income

Comprehensive (loss) income includes unrealized losses on the Company’s cash flow hedges for the years ended December 31, 2018 and 2017.

Revenue Recognition

The Company adopted ASU 2014-09, *Revenue from Contracts with Customers*, and its various updates (“Topic 606”) effective January 1, 2018 using the modified retrospective method with a cumulative adjustment to retained earnings as of January 1, 2018. As such, only the results for the year ended December 31, 2018 presented in the Company’s consolidated statements of operations have been reported using the new revenue standard. The Company has applied Topic 606 to all customer contracts not completed by the initial date of application.

As noted above, the Company adopted Topic 606 on a modified retrospective basis. However, if the Company adjusted the comparative period to reflect the adoption of Topic 606, the following adjustments would have been made to the consolidated statement of operations for the year ended December 31, 2017 (in thousands, except per share data):

	As Previously Reported	Adjustment	As Adjusted
Revenue	\$ 268,028	\$ (7,721)	\$ 260,307
Income tax benefit	(157,333)	(2,094)	(159,427)
Net income available to common shareholders	209,098	(5,627)	203,471
Diluted earnings per share	1.77	(0.05)	1.72

Additionally, the following adjustments would have been made to the consolidated balance sheet as of December 31, 2017 (in thousands):

	As Previously Reported	Adjustment	As Adjusted
Current portion of deferred revenue	\$ 41,846	\$ (7,707)	\$ 34,139
Deferred revenue, net of current portion	29,200	(18,690)	10,510
Deferred tax liability, net	342,382	7,160	349,542
Retained earnings	213,107	(19,237)	193,870

The Company recognizes revenue according to the following steps: (1) identification of the contract with a customer, (2) identification of the performance obligations in the contract, (3) determination of the transaction price, (4) allocation of the transaction price to the performance obligations in the contract and (5) recognition of revenue when, or as, the Company satisfies a performance obligation. The Company’s revenue is composed of operating leases and incentives, and solar energy system and product sales as captioned in the consolidated statements of operations. Operating leases and incentives revenue includes PPA and Solar Lease revenue, solar renewable energy certificates (“SRECs”) sales and rebate incentives. Solar energy system and product sales revenue includes System Sales, which may include structural upgrades in sales contracts and SREC sales related to sold systems, and the sale of photovoltaic installation products. Revenue is recorded net of any sales tax collected.

Operating Leases and Incentives Revenue

The Company enters into PPAs with residential customers, under which the customer agrees to purchase all of the power generated by the solar energy system for the term of the contract, which is 20 years. The agreement includes a fixed price per kilowatt hour with a fixed annual price escalation percentage. Customers have not historically been charged for installation or activation of the solar energy system. For all PPAs, the Company assesses the probability of collectability on a customer-by-customer basis through a credit review process that evaluates their financial condition and ability to pay. The Company has determined that PPAs should be accounted for as operating leases. As PPA customer payments are dependent on power generation, they are considered contingent rentals and are excluded from future minimum annual lease payments. PPA revenue is recognized based on the actual amount of power generated at rates specified under the contracts.

The Company also offers solar energy systems to customers pursuant to Solar Leases in certain markets. The customer agreements are structured as Solar Leases due to local regulations that can be read to prohibit the sale of electricity pursuant to the Company's standard PPA. Pursuant to Solar Leases, the customers' monthly payments are a pre-determined amount calculated based on the expected solar energy generation by the system and typically have included an annual fixed percentage price escalation over the period of the contracts, which is 20 years. The Company provides its Solar Lease customers a performance guarantee, under which the Company agrees to refund certain payments at the end of each year to the customer if the solar energy system does not meet a guaranteed production level in the prior 12-month period. The guaranteed production levels have varying terms. Dependent on the level of the production guarantee, the Company either (1) recognizes revenue on the contracted payments on a straight-line basis over the initial term of the lease, or (2) recognizes the monthly lease payments as revenue and records a solar energy performance guarantee liability due to the contingent nature of the lease payments. A significant majority of Solar Leases are recognized on a straight-line basis. Solar energy performance guarantee liabilities were \$0.2 million and \$0.1 million as of December 31, 2018 and 2017. Solar energy performance guarantees are recognized as contra-revenue in the period in which the liabilities are recorded.

At times the Company makes nominal cash payments to customers in order to facilitate the finalization of long-term customer contracts and the installation of related solar energy systems. These cash payments are considered lease incentives that are deferred and recognized over the term of the contract as a reduction of revenue.

The Company currently accounts for PPAs, Solar Leases, and associated rebates and incentives as minimum lease payments from operating leases under ASC 840, *Leases*. However, the Company has determined that these agreements do not meet the definition of a lease under ASC 842, *Leases*, and these agreements will be accounted for in accordance with Topic 606 after the adoption of ASC 842. The revenue associated with these contracts with customers is currently shown together on the consolidated statement of operations as revenue from operating leases and incentives. The Company will adopt ASC 842 effective January 1, 2019. The Company has determined that under Topic 606 there will be no change from current revenue recognition practices for its PPA revenue stream. For the Company's Solar Leases, the Company has concluded that the impact of adopting Topic 606 will be immaterial. Revenue from all of the Company's Solar Leases will be recognized on a straight-line basis over the contractual term; currently a significant majority of Solar Leases are already recognized on a straight-line basis. The Company has also concluded that there will be no material change related to the timing of revenue recognition for rebates and incentives.

Future minimum annual lease receipts due from customers under Solar Leases as of December 31, 2018 are as follows (in thousands):

Years Ending December 31,

2019	\$	7,551
2020		7,770
2021		7,995
2022		8,227
2023		8,466
Thereafter		132,668
Total minimum lease payments	\$	<u>172,677</u>

The Company applies for and receives SRECs in certain jurisdictions for power generated by solar energy systems it has installed. When SRECs are granted, the Company typically sells them to other companies directly, or to brokers, to assist them in meeting their own mandatory emission reduction or conservation requirements. The Company recognizes revenue related to the sale of these certificates upon delivery, assuming the other revenue recognition criteria discussed above are met. Total SREC revenue was \$44.1 million and \$33.8 million for the years ended December 31, 2018 and 2017.

Solar Energy System and Product Sales

The Company has analyzed the impact of Topic 606 on System Sales and other product sales and has concluded that the revenue recognition associated with these product sales did not change in the consolidated financial statements. The Company will continue to show this revenue stream as solar energy system and product sales in the consolidated statement of operations. The Company's principal performance obligation for System Sales is to design and install a solar energy system that is interconnected to the local power grid and granted permission to operate to the customer. When the solar energy system has been granted permission to operate, the customer retains all of the significant risks and rewards of ownership of the solar energy system. For certain System Sales, the Company provides limited post-sale services to monitor the productivity of the solar energy system for 20 years after it has been placed in service. The Company collects cash during the installation process and recognizes revenue for System Sales and other product sales at the placed in-service date or product delivery date less any revenue allocated to monitoring services. The Company allocates a portion of the transaction price to the monitoring services by estimating the fair market price that the Company would charge for these services if offered separately from the sale of the solar energy system. As of December 31, 2018 and 2017, the Company had allocated deferred revenue of \$3.3 million and \$2.1 million to monitoring services that will be recognized over the term of the monitoring services. All costs to obtain and fulfill contracts associated with System Sales and other product sales are expensed as a cost of revenue when the Company has fulfilled its performance obligation and the products have been placed into service or delivered to the customer.

Lease Pass-Through Arrangement

The Company has assessed the impact of Topic 606 as it relates to the sales of ITCs through its lease pass-through fund arrangement. The Company has concluded that revenue related to the sale of ITCs through its lease pass-through arrangement is recognized when the related solar energy systems are placed in service as the Company has completed its performance obligation to transfer ITCs to the fund investors at that time. The fund investors contributed cash to the investment fund during the installation process as payment for the ITCs. The transaction price for the ITCs was estimated using the tax credit rate of 30% multiplied by the fair market value of the solar energy systems that were placed into service in the lease pass-through fund. All of the related solar energy systems were placed in service and all related revenue would have been recognized prior to September 30, 2016 under Topic 606. Prior to the adoption of Topic 606, the Company recognized this revenue evenly over the five-year ITC recapture period. Under Topic 606, this earlier recognition of the ITC lease pass-through revenue decreased revenue for the year ended December 31, 2018 by \$7.7 million and would have decreased revenue for the year ended December 31, 2017 by \$7.7 million. As all ITC sales revenue would have been recognized prior to September 30, 2016 under Topic 606, there is no deferred revenue related to ITC sales recorded after the adoption date of January 1, 2018, and there would have been no deferred revenue as of December 31, 2017. As shown above, the cumulative adjustment related to ITC revenue recognized into retained earnings, net of tax, as of January 1, 2018 was \$19.2 million.

Cost of Revenue

Cost of Revenue—Operating Leases and Incentives

Cost of revenue—operating leases and incentives includes the depreciation of the cost of solar energy systems under long-term customer contracts and the amortization of the related capitalized initial direct costs. It also includes allocated indirect material and labor costs related to the processing; account creation; design; installation; interconnection and servicing of solar energy systems that are not capitalized, such as personnel costs not directly associated to a solar energy system installation; warehouse rent and utilities; and fleet vehicle executory costs. The cost of operating leases and incentives also includes allocated facilities and information technology costs. The cost of revenue for the sales of SRECs is limited to broker fees which are paid in connection with certain SREC transactions.

Cost of Revenue—Solar Energy System and Product Sales

Cost of revenue—solar energy system and product sales consists of direct and allocated indirect material and labor costs for System Sales, photovoltaic installation products and structural upgrades. Indirect material and labor costs are ratably allocated to System Sales and include costs related to the processing; account creation; design; installation; interconnection and servicing of solar energy systems, such as personnel costs not directly associated to a solar energy system installation; warehouse rent and utilities; and fleet vehicle executory costs. The cost of solar energy system and product sales also includes allocated facilities and information technology costs. Costs of solar energy system sales are recognized in conjunction with the related revenue upon the solar energy system passing an inspection by the responsible governmental department after completion of system installation and interconnection to the local power grid.

Advertising Costs

Advertising costs are expensed when incurred and are included in sales and marketing expenses in the consolidated statements of operations. The Company's advertising costs were \$3.6 million and \$2.3 million for the years ended December 31, 2018 and 2017.

Vivint Related Party Expenses

The Company has historically relied on the technical support of Vivint, Inc. (“Vivint”) to run its business. The Company used certain of Vivint’s information technology and infrastructure until transitioning off in July 2017. The Company has entered into a sales dealer agreement with Vivint, pursuant to which each company will act as a non-exclusive dealer for the other party to market. The fees under these agreements were allocated to the Company on a basis that was considered to reasonably reflect the utilization of the services provided to, or the benefit obtained by, the Company. For additional information, see Note 16—Related Party Transactions.

Other (Income) Expense, Net

For the year ended December 31, 2018, other (income) expense, net primarily includes changes in fair value for the Company’s interest rate swaps not designated as hedges and a payment received as an initial distribution on one of the Company’s legal proceedings. For the year ended December 31, 2017, other (income) expense, net primarily includes changes in fair value for the ineffective portions of the cash flow hedges and the interest rate swaps not designated as hedges. Changes in the fair value of the Company’s interest rate swaps are recorded in other (income) expense, net each reporting period when the interest rate swaps are marked to market.

Provision for Income Taxes

The Company accounts for income taxes under an asset and liability approach. Deferred income taxes are classified as long-term and reflect the impact of temporary differences between assets and liabilities recognized for financial reporting purposes and the amounts recognized for income tax reporting purposes, net operating loss carryforwards, and other tax credits measured by applying currently enacted tax laws. A valuation allowance is provided when necessary to reduce deferred tax assets to an amount that is more likely than not to be realized. As required by ASC 740, the Company recognizes the effect of tax rate and law changes on deferred taxes in the reporting period in which the legislation is enacted.

The Company sells solar energy systems to the investment funds for income tax purposes. As the investment funds are consolidated by the Company, the gain on the sale of the solar energy systems is eliminated in the consolidated financial statements. However, this gain is recognized for tax reporting purposes. The Company adopted ASU 2016-16, *Income Taxes (Topic 740): Intra-Entity Transfers of Assets Other Than Inventory* (“ASU 2016-16”), effective January 1, 2018 using the modified retrospective method. With the adoption of ASU 2016-16, the Company now accounts for the income tax consequences of these intra-entity transfers, both current and deferred, as a component of income tax expense and deferred tax liability, net during the period in which the transfers occur. Prior to the adoption of ASU 2016-16, any tax expense incurred related to these intra-entity sales was deferred and amortized over the estimated useful life of the underlying solar energy systems, which was estimated to be 30 years. Accordingly, the Company had recorded a prepaid tax asset, net, of \$505.9 million as of December 31, 2017, which was removed as of January 1, 2018 by recording a cumulative adjustment to retained earnings of \$493.1 million and to deferred tax liability, net of \$12.8 million. As the Company used the modified retrospective method to apply ASU 2016-16, only the current periods presented in the Company’s consolidated statements of operations have been reported using the new accounting standard.

The adoption of ASU 2016-16 had the following effect on the Company’s consolidated statement of operations for the year ended December 31, 2018 (in thousands, except per share data):

	Year Ended December 31, 2018		
	Pre-Adoption Accounting	Effect of Adoption	As Reported
Income tax expense	\$ 39,041	\$ 67,258	\$ 106,299
Net loss	(212,305)	(67,258)	(279,563)
Net loss attributable to common shareholders	51,666	(67,258)	(15,592)
Basic earnings per share	0.44	(0.57)	(0.13)
Diluted earnings per share	0.42	(0.55)	(0.13)

The Company adopted ASU 2018-02, *Income Statement—Reporting Comprehensive Income (Topic 220): Reclassification of Certain Tax Effects from Accumulated Other Comprehensive Income* (“ASU 2018-02”), effective January 1, 2018. As permitted by ASU 2018-02, the Company has elected to reclassify the income tax effects of the Tax Cuts and Jobs Act (the “TCJA”) on items within accumulated other comprehensive income (“AOCI”) to retained earnings. The Company applied the amendments in this update in the period of adoption. The total amount the Company reclassified to retained earnings as a result of adopting ASU 2018-02 was approximately \$1.5 million. After applying this update, the Company had no stranded tax effects remaining in AOCI.

The Company determines whether a tax position is more likely than not to be sustained upon examination, including resolution of any related appeals or litigation processes, based on the technical merits of the position. The Company uses a two-step approach to recognizing and measuring uncertain tax positions. The first step is to evaluate the tax position for recognition by determining if the weight of available evidence indicates that it is more likely than not that the position will be sustained upon tax authority examination, including resolution of related appeals or litigation processes, if any. The second step is to measure the tax benefit as the largest amount that is more than 50% likely of being realized upon ultimate settlement.

The Company's policy is to include interest and penalties related to unrecognized tax benefits, if any, within income tax expense (benefit).

Stock-Based Compensation Expense

Stock-based compensation expense for equity instruments issued to employees is measured based on the grant-date fair value of the awards. The fair value of each restricted stock unit award and performance share unit award is determined as the closing price of the Company's stock on the date of grant. The fair value of each time-based employee stock option is estimated on the date of grant using the Black-Scholes-Merton stock option pricing valuation model. The Company recognizes compensation costs using the accelerated attribution method for all employee stock-based compensation awards over the requisite service period of the awards, which is generally the awards' vesting period.

Stock-based compensation expense for equity instruments issued to non-employees is recognized based on the estimated fair value of the equity instrument. The fair value of the non-employee awards is subject to remeasurement at each reporting period until services required under the arrangement are completed, which is the vesting date.

Post-Employment Benefits

The Company sponsors a 401(k) Plan that covers all of the Company's eligible employees. The Company did not provide a discretionary company match to employee contributions during any of the periods presented.

Non-Controlling Interests and Redeemable Non-Controlling Interests

Non-controlling interests and redeemable non-controlling interests represent fund investors' interests in the net assets of certain consolidated investment funds, which have been entered into by the Company in order to finance the costs of solar energy systems under long-term customer contracts. The Company has determined that the provisions in the contractual arrangements represent substantive profit-sharing arrangements, which gives rise to the non-controlling interests and redeemable non-controlling interests. The Company has further determined that the appropriate methodology for attributing income and loss to the non-controlling interests and redeemable non-controlling interests each period is a balance sheet approach referred to as the hypothetical liquidation at book value ("HLBV") method. Under the HLBV method, the amounts of income and loss attributed to the non-controlling interests and redeemable non-controlling interests in the consolidated statements of operations reflect changes in the amounts the fund investors would hypothetically receive at each balance sheet date under the liquidation provisions of the contractual agreements of these structures, assuming the net assets of these funding structures were liquidated at recorded amounts. The fund investors' non-controlling interest in the results of operations of these funding structures is determined as the difference in the non-controlling interests' and redeemable non-controlling interests' claims under the HLBV method at the start and end of each reporting period, after considering any capital transactions, such as contributions or distributions, between the fund and the fund investors.

Attributing income and loss to the non-controlling interests and redeemable non-controlling interests under the HLBV method requires the use of significant assumptions and estimates to calculate the amounts that fund investors would receive upon a hypothetical liquidation. Changes in these assumptions and estimates can have a significant impact on the amount that fund investors would receive upon a hypothetical liquidation. The use of the HLBV methodology to allocate income to the non-controlling and redeemable non-controlling interest holders may create volatility in the Company's consolidated statements of operations as the application of HLBV can drive changes in net income available and loss attributable to non-controlling interests and redeemable non-controlling interests from quarter to quarter.

The Company classifies certain non-controlling interests with redemption features that are not solely within the control of the Company outside of permanent equity on its consolidated balance sheets. Estimated redemption value is calculated as the discounted cash flows subsequent to the expected flip date of the respective investment funds. Redeemable non-controlling interests are reported using the greater of their carrying value at each reporting date as determined by the HLBV method or their estimated redemption value in each reporting period. Estimating the redemption value of the redeemable non-controlling interests requires the use of significant assumptions and estimates. Changes in these assumptions and estimates can have a significant impact on the calculation of the redemption value.

Loss Contingencies

The Company is subject to the possibility of various loss contingencies arising in the ordinary course of business. The Company considers the likelihood of loss or impairment of an asset, or the incurrence of a liability, as well as the Company's ability to reasonably estimate the amount of loss, in determining loss contingencies. An estimated loss contingency is accrued when it is probable that an asset has been impaired or a liability has been incurred and the amount of loss can be reasonably estimated. The Company regularly evaluates current information available to determine whether an accrual is required, an accrual should be adjusted or a range of possible loss should be disclosed.

Segment Information

The Company's chief operating decision maker is its chief executive officer. The chief executive officer reviews financial information for purposes of allocating resources and evaluating financial performance. The Company has one business activity, providing solar energy services and products to customers. Accordingly, the Company has a single operating and reporting segment.

Recent Accounting Pronouncements

During 2018, the Financial Accounting Standards Board (the "FASB") issued ASU 2018-20, ASU 2018-11 and ASU 2018-10, which clarify aspects of the guidance in ASU 2016-02, *Leases (Topic 842)*. The objective of ASU 2016-02 is to increase transparency and comparability among organizations by recognizing lease assets and lease liabilities on the balance sheet and disclosing key information about leasing arrangements. This update primarily changes the recognition by lessees of lease assets and liabilities for leases currently classified as operating leases. Lessor accounting remains largely unchanged. This update is effective in fiscal years beginning after December 15, 2018 for public business entities. The amendments are required to be applied using a modified retrospective approach. However, ASU 2018-11 provides an additional transition method under which an entity will apply the updates in ASU 2016-02 as of the adoption date with a cumulative-effect adjustment to the opening balance of retained earnings. Under this additional transition method, periods ending prior to January 1, 2019 will be presented in accordance with ASC 840, and periods ending after January 1, 2019 will be presented in accordance with ASC 842. The Company will adopt this standard effective January 1, 2019 and plans to utilize the transition method permitted by ASU 2018-11. As discussed above with regard to the Company's policies for revenue recognition, the Company's PPAs and Solar Leases will no longer be considered leases under Topic 842 and will be accounted for under ASC 606. The Company does not expect that change to have a material effect on the timing and pattern of revenue recognition for PPAs and Solar Leases. Upon adoption of Topic 842, the Company will no longer capitalize initial direct costs. Instead, the Company will capitalize costs to obtain a contract which meet the "incremental" criteria defined in Topic 606. These costs will be amortized over the period of benefit to sales and marketing expense on the consolidated statements of operations. The Company has operating leases in which it is the lessee that will be affected by this update and the Company is still evaluating the full impact on its consolidated financial statements and related disclosures. The impact is not expected to be significant to the Company's consolidated financial statements.

In June 2018, the FASB issued ASU 2018-07, *Compensation—Stock Compensation (Topic 718): Improvements to Nonemployee Share-Based Payment Accounting*. This update expands the scope of Topic 718 to include share-based payments to nonemployees. Under current guidance, the measurement date for nonemployee equity awards is not established until the nonemployee's performance is complete. This update states that the measurement date for nonemployee equity awards will now be established at the grant date. This amendment is effective for annual periods beginning after December 15, 2018 and is applied through a modified retrospective method with a cumulative-effect adjustment to retained earnings as of the beginning of the fiscal year of adoption. The Company has outstanding nonemployee equity awards that will be affected by this update. The Company currently marks all nonemployee awards to market at each reporting period and has determined that the impact of adopting this ASU is immaterial.

In August 2018, the FASB issued ASU 2018-15, *Intangibles—Goodwill and Other—Internal-Use Software (Subtopic 350-40): Customer's Accounting for Implementation Costs Incurred in a Cloud Computing Arrangement that is a Service Contract*. This update clarifies that entities should capitalize implementation costs incurred in cloud computing arrangements that are service contracts. Entities expense the capitalized costs over the term of the hosting arrangement. The service element of a hosting arrangement that is a service contract is not affected by this update, meaning service costs will continue to be expensed as incurred. This amendment is effective for fiscal periods beginning after December 15, 2019 for public business entities. The amendments in this update should be applied prospectively to all implementation costs incurred after the date of adoption or retrospectively. The Company is evaluating the impact of this update and currently anticipates using the prospective transition method.

3. Fair Value Measurements

The Company measures and reports its cash equivalents at fair value. The following tables set forth the fair value of the Company's financial assets and liabilities included on the consolidated balance sheets measured on a recurring basis by level within the fair value hierarchy (in thousands):

	December 31, 2018			
	Level 1	Level 2	Level 3	Total
Financial Assets				
Interest rate swaps	\$ —	\$ 130	\$ —	\$ 130
Financial Liabilities				
Interest rate swaps	\$ —	\$ 11,146	\$ —	\$ 11,146
	December 31, 2017			
	Level 1	Level 2	Level 3	Total
Financial Assets				
Interest rate swaps	\$ —	\$ 14,028	\$ —	\$ 14,028
Financial Liabilities				
Interest rate swaps	\$ —	\$ 1,280	\$ —	\$ 1,280

The interest rate swaps (Level 2) were valued using a discounted cash flow model which incorporates an assessment of the risk of non-performance by the interest rate swap counterparties and the Company. The valuation model uses various observable inputs including contractual terms, interest rate curves, credit spreads and measures of volatility. During 2018, the Company settled the interest rate swaps associated with its 2016 Term Loan Facility and Aggregation Facility. The settlement of the interest rate swaps on the 2016 Term Loan Facility, which were designated as hedges, resulted in a \$22.5 million realized gain that was recorded as a reduction to interest expense. The settlement of the interest rate swaps on the Aggregation Facility, which were not designated as hedges, resulted in a \$2.0 million realized gain that was recorded as other income. The Company has since opened new interest rate swaps for its Aggregation Facility, which are not designated as hedges, the fair value of which is represented in financial liabilities above. During the year ended December 31, 2018 the Company also opened interest rate swaps for its Solar Asset Backed Notes, Series 2018-2, which are designated as hedges, the fair value of which is represented in financial liabilities above.

The carrying values and fair values of the Company's long-term debt were as follows (in thousands):

	December 31, 2018		December 31, 2017	
	Carrying Value	Fair Value	Carrying Value	Fair Value
Floating-rate long-term debt	\$ 587,358	\$ 587,358	\$ 757,044	\$ 757,044
Fixed-rate long-term debt	653,031	673,917	199,063	238,618
Total	\$ 1,240,389	\$ 1,261,275	\$ 956,107	\$ 995,662

The Company's outstanding principal balance of long-term debt is carried at cost. The Company estimated the fair values of its floating-rate debt facilities (Level 2) to approximate their carrying values as interest accrues at floating rates based on market rates. The Company's fixed-rate debt facilities (Level 2) were valued using quoted prices for the fixed rate debt facilities that are publicly traded, or quoted prices for corporate debt with similar terms for debt facilities that are not publicly traded.

4. Inventories

Inventories consisted of the following (in thousands):

	December 31, 2018	December 31, 2017
Solar energy systems held for sale	\$ 12,321	\$ 21,971
Photovoltaic installation products	936	626
Total inventories	\$ 13,257	\$ 22,597

Solar energy systems held for sale are solar energy systems under construction that have yet to be interconnected to the power grid and that will be sold to customers. Solar energy systems held for sale are stated at the lower of cost, on a FIFO basis, or net realizable value. Photovoltaic installation products are stated at the lower of cost, on an average cost basis, or net realizable value.

5. Solar Energy Systems

Solar energy systems, net consisted of the following (in thousands):

	December 31, 2018	December 31, 2017
System equipment costs	\$ 1,667,440	\$ 1,437,419
Initial direct costs related to solar energy systems	435,084	336,136
	2,102,524	1,773,555
Less: Accumulated depreciation and amortization	(195,890)	(129,640)
	1,906,634	1,643,915
Solar energy system inventory	32,240	29,617
Solar energy systems, net	<u>\$ 1,938,874</u>	<u>\$ 1,673,532</u>

Solar energy system inventory represents the solar components and materials used in the installation of solar energy systems prior to being installed on customers' roofs. As such, no depreciation is recorded related to this line item. The Company recorded depreciation and amortization expense related to solar energy systems of \$66.3 million and \$55.8 million for the years ended December 31, 2018 and 2017.

6. Property and Equipment

Property and equipment, net consisted of the following (in thousands):

	Estimated Useful Lives	December 31, 2018	December 31, 2017
Leasehold improvements	1-12 years	\$ 10,560	\$ 15,071
Vehicles acquired under capital leases	3-5 years	6,907	15,113
Furniture and computer and other equipment	3 years	3,816	6,492
		21,283	36,676
Less: Accumulated depreciation and amortization		(10,553)	(21,598)
Property and equipment, net		<u>\$ 10,730</u>	<u>\$ 15,078</u>

The Company recorded depreciation and amortization expense related to property and equipment of \$4.8 million and \$8.4 million for the years ended December 31, 2018 and 2017.

The Company leases fleet vehicles that are accounted for as capital leases and are included in property and equipment, net. Of total property and equipment depreciation and amortization, depreciation on vehicles under capital leases of \$2.0 million and \$3.6 million was capitalized in solar energy systems, net for the years ended December 31, 2018 and 2017.

Future minimum lease payments for vehicles under capital leases as of December 31, 2018 were as follows (in thousands):

Years Ending December 31,

2019	\$ 2,069
2020	466
2021	24
2022	32
2023	—
Thereafter	—
Total minimum lease payments	2,591
Less: interest	165
Present value of capital lease obligations	2,426
Less: current portion	1,921
Long-term portion	<u>\$ 505</u>

7. Intangible Assets

Net intangible assets are included in other non-current assets, net and consisted of the following (in thousands):

	December 31, 2018	December 31, 2017
Cost:		
Internal-use software	\$ 1,020	\$ 1,314
Developed technology	522	522
Trademarks/trade names	201	201
Customer relationships	—	164
Total carrying value	1,743	2,201
Accumulated amortization:		
Internal-use software	(781)	(872)
Developed technology	(324)	(258)
Trademarks/trade names	(99)	(79)
Customer relationships	—	(130)
Total accumulated amortization	(1,204)	(1,339)
Total intangible assets, net	\$ 539	\$ 862

The Company recorded amortization expense of \$0.5 million and \$0.6 million for the years ended December 31, 2018 and 2017, which is included within general and administrative expense on the consolidated statements of operations.

As of December 31, 2018, expected amortization expense for the unamortized intangible assets was as follows (in thousands):

<u>Years Ending December 31,</u>		
2019	\$	208
2020		161
2021		130
2022		20
2023		20
Thereafter		—
Total	\$	539

8. Accrued Compensation

Accrued compensation consisted of the following (in thousands):

	December 31, 2018	December 31, 2017
Accrued payroll	\$ 16,352	\$ 13,064
Accrued commissions	9,168	7,928
Total accrued compensation	\$ 25,520	\$ 20,992

9. Accrued and Other Current Liabilities

Accrued and other current liabilities consisted of the following (in thousands):

	December 31, 2018	December 31, 2017
Accrued unused commitment fees and interest	\$ 14,102	\$ 7,445
Accrued professional fees	6,150	3,977
Current portion of lease pass-through financing obligation	5,038	4,931
Accrued inventory	4,380	4,122
Accrued workers' compensation	4,033	1,446
Sales, use and property taxes payable	3,132	3,046
Workmanship accrual	2,630	1,359
Current portion of deferred rent	951	937
Other accrued expenses	2,444	2,412
Total accrued and other current liabilities	<u>\$ 42,860</u>	<u>\$ 29,675</u>

10. Debt Obligations

Debt obligations consisted of the following as of December 31, 2018 (in thousands, except interest rates):

	Principal Borrowings Outstanding	Unamortized Debt Issuance Costs		Net Carrying Value		Unused Borrowing Capacity	Interest Rate	Maturity Date
		Current	Long-term	Current	Long-term			
Solar asset backed notes, Series 2018-1 (1)	\$ 462,826	\$ (74)	\$ (9,172)	\$ 3,655	\$ 449,925	\$ —	5.1%	October 2028
Solar asset backed notes, Series 2018-2 (2)(3)	342,833	(6)	(7,388)	294	335,145	—	5.4	August 2023
2017 Term loan facility	188,922	(170)	(4,614)	6,679	177,459	—	6.0	January 2035
Forward flow loan facility	58,425	(43)	(3,365)	1,512	53,505	71,575	5.2	(4)
Credit agreement	1,283	(2)	(118)	15	1,148	—	6.5	February 2023
Revolving lines of credit (5)								
Aggregation facility	50,000	—	—	—	50,000	325,000	5.7	September 2020
Working capital facility (6)	136,100	—	—	—	136,100	—	5.6	March 2020
Total debt	<u>\$ 1,240,389</u>	<u>\$ (295)</u>	<u>\$ (24,657)</u>	<u>\$ 12,155</u>	<u>\$ 1,203,282</u>	<u>\$ 396,575</u>		

Debt obligations consisted of the following as of December 31, 2017 (in thousands, except interest rates):

	Principal Borrowings Outstanding	Unamortized Debt Issuance Costs		Net Carrying Value		Unused Borrowing Capacity	Interest Rate	Maturity Date
		Current	Long-term	Current	Long-term			
2017 Term loan facility	\$ 197,764	\$ (176)	\$ (4,990)	\$ 6,644	\$ 185,954	\$ —	6.0%	January 2035
2016 Term loan facility	287,919	(141)	(7,623)	4,962	275,193	—	4.3	August 2021
Subordinated HoldCo facility	197,625	(35)	(3,451)	1,965	192,174	—	9.3	March 2020
Credit agreement	1,299	(2)	(140)	14	1,143	—	6.5	February 2023
Revolving lines of credit (5)								
Aggregation facility	135,000	—	—	—	135,000	240,000	4.7	September 2020
Working capital facility (6)	136,500	—	—	—	136,500	—	4.8	March 2020
Total debt	<u>\$ 956,107</u>	<u>\$ (354)</u>	<u>\$ (16,204)</u>	<u>\$ 13,585</u>	<u>\$ 925,964</u>	<u>\$ 240,000</u>		

- (1) The interest rate disclosed in the table above is a weighted-average rate. The Series 2018-1 Notes are comprised of Class A and Class B Notes. Class A Notes accrue interest at 4.73%. Class B Notes accrue interest at 7.37%.
- (2) The Series 2018-2 Notes are comprised of Class A and Class B Notes. Class B Notes accrue interest at a rate of LIBOR plus 4.75%. Class A Notes accrue interest at a variable spread over LIBOR that results in a weighted average spread for all 2018-2 Notes of 2.95%.
- (3) The interest rate of this facility is partially hedged to an effective interest rate of 6.0% for \$326.8 million of the principal borrowings. See Note 11—Derivative Financial Instruments.
- (4) The maturity date for this facility is 20 years from the end date of the borrowing availability period when all borrowings are aggregated into one term loan, which will be no later than October 31, 2019.
- (5) Revolving lines of credit are not presented net of unamortized debt issuance costs.
- (6) Facility is recourse debt, which refers to debt that is collateralized by the Company's general assets. All of the Company's other debt obligations are non-recourse, which refers to debt that is only collateralized by specified assets or subsidiaries of the Company.

The Company's debt facilities include customary events of default, conditions to borrowing and covenants, including covenants that restrict, subject to certain exceptions, the Company's ability to incur indebtedness, incur liens, make investments, make fundamental changes to their business, dispose of assets, make certain types of restricted payments or enter into certain related party transactions. Additionally, the Company is required to maintain certain financial measurements and interest rate swaps for certain debt facilities. These restrictions do not impact the Company's ability to enter into investment funds, including those that are similar to those entered into previously. The Company's debt facilities are secured by net cash flows from long-term customer contracts. The Company was in compliance with all debt covenants as of December 31, 2018.

Solar Asset Backed Notes, Series 2018-1

In June 2018, a wholly owned subsidiary of the Company issued an aggregate principal amount of \$400.0 million of Solar Asset Backed Notes, Series 2018-1, Class A (the "2018-1 Class A Notes") and an aggregate principal amount of \$66.0 million of Solar Asset Backed Notes, Series 2018-1, Class B (the "2018-1 Class B Notes") and together with the 2018-1 Class A Notes, (the "2018-1 Notes"). The 2018-1 Class A Notes accrue interest at a fixed rate of 4.73% and have an anticipated repayment date of October 30, 2028. The 2018-1 Class B Notes accrue interest at a fixed rate of 7.37% and have an anticipated repayment date of October 30, 2028.

In addition to customary events of default and covenants, the 2018-1 Notes are subject to unscheduled prepayment events that generally are customary in nature for solar securitizations of this type, including (1) asset coverage ratios falling below certain levels, (2) a debt service coverage ratio falling below certain levels, (3) the failure to maintain insurance, and (4) the failure to repay the notes in full prior to the anticipated repayment date for such class of notes. The occurrence of an unscheduled prepayment event or an event of default could result in the more rapid repayment of the 2018-1 Notes, and the occurrence of an event of default could, in certain instances, result in the liquidation of the collateral securing the 2018-1 Notes. The 2018-1 Notes are secured by, and payable solely from the cash flow generated by the membership interests in certain indirectly owned subsidiaries of the Company, each of which subsidiaries is the managing member of a project company that owns a pool of photovoltaic systems and related Solar Leases and PPAs and ancillary rights and agreements that were originated by a wholly owned subsidiary of the Company. As of December 31, 2018, the Company had \$13.5 million in required reserves outstanding in collateral accounts with the administrative agent, which are included in restricted cash and cash equivalents.

Solar Asset Backed Notes, Series 2018-2

In June 2018, a wholly owned subsidiary of the Company issued an aggregate principal amount of \$296.0 million of Solar Asset Backed Notes, Series 2018-2, Class A (the "2018-2 Class A Notes") and an aggregate principal amount of \$49.0 million of Solar Asset Backed Notes, Series 2018-2, Class B (the "2018-2 Class B Notes") and together with the 2018-2 Class A Notes, (the "2018-2 Notes"). The 2018-2 Class A Notes accrue interest at a variable spread over the London Interbank Offered Rate ("LIBOR") that is intended to result in a weighted average spread for all 2018-2 Notes of 2.95%. The 2018-2 Class B Notes accrue interest at a spread over LIBOR of 4.75% or, if no 2018-2 Class A Notes are outstanding, 2.95%. The Company entered into an interest rate swap concurrent with the issuance of the 2018-2 Notes that results in an implied all-in interest rate of approximately 5.95%. See Note 11—Derivative Financial Instruments. The 2018-2 Notes have a stated maturity of August 29, 2023.

The 2018-2 Notes have the same events of default, covenants and unscheduled prepayment events as the 2018-1 Notes. In addition, the 2018-2 Notes are subject to unscheduled prepayment events relating to certain change of control events and certain liquidity requirements. As of December 31, 2018, the Company had \$24.1 million in required reserves outstanding in collateral accounts with the administrative agent, which are included in restricted cash and cash equivalents.

2016 Term Loan Facility

In June 2018, the Company used proceeds from the issuance of the 2018-1 Notes and 2018-2 Notes to pay off the outstanding balance of \$282.3 million on the credit facility entered into by a wholly owned subsidiary of the Company in August 2016 (the "2016 Term Loan Facility") and terminated the credit agreement. At termination, the outstanding balance was composed of \$281.8 million of principal and \$0.5 million of accrued interest. The termination of the 2016 Term Loan Facility was accounted for as a debt extinguishment. As such, the remaining \$6.9 million of unamortized debt issuance costs related to the 2016 Term Loan Facility were recognized in interest expense during the year ended December 31, 2018. There was no prepayment fee associated with the termination of the 2016 Term Loan Facility.

Subordinated HoldCo Facility

In June 2018, the Company used proceeds from the issuance of the 2018-1 Notes and 2018-2 Notes to pay off the outstanding balance of \$206.4 million on the credit facility entered into by a wholly owned subsidiary of the Company in March 2016 (the “Subordinated HoldCo Facility”) and terminated the financing agreement. At termination, the outstanding balance was composed of \$196.6 million of principal, \$3.9 million of accrued interest, and a prepayment fee of \$5.9 million, which was calculated as 3.0% of the outstanding principal balance. The termination of the Subordinated HoldCo Facility was accounted for as a debt extinguishment. As such, the remaining \$2.9 million of unamortized debt issuance costs related to the Subordinated HoldCo Facility were recognized in interest expense during the year ended December 31, 2018. The prepayment fee of \$5.9 million was also recognized in interest expense during the year ended December 31, 2018.

2017 Term Loan Facility

In January 2017, a wholly owned subsidiary of the Company entered into a long-term fixed rate credit agreement (the “2017 Term Loan Facility”). Interest on borrowings accrues at an annual fixed rate equal to 6.0% and is payable in arrears. Certain principal payments are due on a quarterly basis, subject to the occurrence of certain events. As of December 31, 2018, the Company had \$19.5 million in required reserves outstanding in collateral accounts with the administrative agent, which were included in restricted cash and cash equivalents.

Forward Flow Loan Facility

In August 2018, a subsidiary which is indirectly owned by the Company together with investors, entered into a loan agreement (the “Forward Flow Loan Facility”) pursuant to which the Company may borrow up to an aggregate principal amount of \$130.0 million. The borrower may make multiple borrowings under the Forward Flow Loan Facility during the availability period, which will continue no later than October 31, 2019. After the availability period, all outstanding loans under the Forward Flow Loan Facility will be aggregated into a single term loan with a maturity date 20 years after the date of aggregation. Interest on each loan will accrue at an annual rate equal to the U.S. swap rate for the weighted-average life of such loan, plus an applicable margin equal to the greater of (a) 1.9% plus a spread adjustment based on the risk premium on the borrowing date relative to the market index-based risk premium on the closing date and (b) 1.5%. Scheduled principal payments are due on a quarterly basis, at the end of January, April, July and October of each year. Upon the occurrence of certain events, the Company will be required to make prepayments of the loans, including payment of a make-whole amount in certain circumstances. As of December 31, 2018, the Company had \$2.4 million in required reserves outstanding in collateral accounts with the administrative agent, which were included in restricted cash and cash equivalents.

Credit Agreement

In February 2016, a wholly owned subsidiary of the Company entered into a fixed rate credit agreement (the “Credit Agreement”). Principal and interest payments under the Credit Agreement are paid quarterly over the term of the loan. Interest accrues on borrowings at a fixed rate of 6.50%.

Aggregation Facility

In September 2014, a wholly owned subsidiary of the Company entered into an aggregation credit facility (as amended, the “Aggregation Facility”), pursuant to which the Company may borrow up to an aggregate of \$375.0 million and, upon the satisfaction of certain conditions and the approval of the lenders, up to an additional aggregate of \$175.0 million in borrowings. Prepayments are permitted under the Aggregation Facility. Under the Aggregation Facility, interest on borrowings accrues at a floating rate equal to either (1)(a) LIBOR or (b) the greatest of (i) the Federal Funds Rate plus 0.5%, (ii) the administrative agent’s prime rate and (iii) LIBOR plus 1% and (2) a margin that varies between 3.25% during the period during which the Company may incur borrowings and 3.75% after such period. As of December 31, 2018, the Company had \$1.6 million in required reserves outstanding in collateral accounts with the administrative agent, which were included in restricted cash and cash equivalents.

Working Capital Facility

In March 2015, a wholly owned subsidiary of the Company entered into a revolving credit agreement (the “Working Capital Facility”) pursuant to which the Company may borrow up to an aggregate principal amount of \$150.0 million from certain financial institutions. In addition to the outstanding borrowings as of September 30, 2018, the Company had established letters of credit under the Working Capital Facility for up to \$13.9 million related to insurance contracts. Prepayments are permitted under the Working Capital Facility. Interest accrues on borrowings at a floating rate equal to, depending on the type of borrowing, (1) a rate equal to the Eurodollar Rate for the interest period divided by one minus the Eurodollar Reserve Percentage, plus a margin of 3.25%; or (2) the highest of (a) the Federal Funds Rate plus 0.50%, (b) the Citibank prime rate and (c) the one-month interest period Eurodollar rate plus 1.00%, plus a margin of 2.25%. Interest is payable depending on the type of borrowing at the end of (1) the interest period that the Company may elect as a term, not to exceed three months, (2) quarterly or (3) at maturity of the Working Capital Facility. The Company is required to maintain \$30.0 million in cash and cash equivalents and certain investments as of the last day of each quarter. As of December 31, 2018, the Company was in compliance with such covenants.

Scheduled Maturities of Debt

The scheduled maturities of debt as of December 31, 2018 are as follows (in thousands):

2019	\$	12,450
2020		200,641
2021		13,443
2022		18,553
2023		357,167
Thereafter		638,135
Total	\$	<u>1,240,389</u>

11. Derivative Financial Instruments

Derivative financial instruments at fair value consisted of the following (in thousands):

	December 31, 2018	
	Fair Value	Balance Sheet Location
Derivatives designated as hedging instruments:		
Interest rate swaps	\$ 9,884	Other non-current liabilities
Derivatives not designated as hedging instruments:		
Interest rate swaps	\$ 1,262	Other non-current liabilities
Interest rate swaps	\$ 130	Other non-current assets
	December 31, 2017	
	Fair Value	Balance Sheet Location
Derivatives designated as hedging instruments:		
Interest rate swaps	\$ 14,028	Other non-current assets
Derivatives not designated as hedging instruments:		
Interest rate swaps	\$ 1,280	Other non-current liabilities

The Company is exposed to interest rate risk relating to its outstanding debt facilities that have variable interest rates. In connection with the 2016 Term Loan Facility, the Company entered into interest rate swaps to offset changes in the variable interest rate for a portion of the Company’s LIBOR-indexed floating-rate loans. During the year ended December 31, 2018, the Company paid off and terminated the 2016 Term Loan Facility and settled all outstanding interest rate swaps associated with the 2016 Term Loan Facility. As a result of settling the interest rate swaps, which were designated as hedges, the Company realized a \$22.5 million gain that was recorded as a reduction to interest expense.

In connection with the March 2017 amendment of the Aggregation Facility, the Company is required to maintain interest rate swaps such that at least 75% of the outstanding loan balance of the Aggregation Facility is hedged. The Company is required to meet this threshold within 15 business days after the end of each quarterly period. During the second quarter of 2018, the outstanding balance of the Aggregation Facility was paid off, and as a result, the Company settled all outstanding interest rate swaps associated with the Aggregation Facility during that quarter. The settlement of the interest rate swaps, which were not designated as hedges, resulted in a realized gain of \$2.0 million that was recorded as other income. As of December 31, 2018, the Company had drawn on the Aggregation Facility again and entered into interest rate swaps with an aggregate notional amount of \$40.0 million. The interest rate swaps terminate when the Aggregation Facility matures in September 2020. The Company did not designate these interest rate swaps as hedge instruments and accounts for any changes in fair value in other expense, net.

In connection with the 2018-2 Notes, the Company entered into interest rate swaps to offset changes in the variable interest rate for a portion of these notes. As of December 31, 2018, the notional amount of these interest rate swaps was \$326.8 million. The notional amount of the interest rate swaps decreases through the maturity of the 2018-2 Notes, similar to the Company's estimated semi-annual principal payments on the 2018-2 Notes through August 2023. The interest rate swaps are designated as cash flow hedges, and unrealized gains or losses are recorded in OCI. The amount of AOCI expected to be reclassified to interest expense within the next 12 months is approximately \$1.3 million. The Company will discontinue the hedge accounting designation of these derivatives if interest payments on LIBOR-indexed floating rate loans compared to the payments under the derivatives are no longer highly effective.

The Company adopted ASU 2017-12 as of January 1, 2018. Among other changes, this update eliminated the separate measurement of hedge ineffectiveness. The Company adopted this update using a modified retrospective method with a cumulative-effect adjustment to retained earnings as of January 1, 2018. As a result, the Company ceased measuring hedge ineffectiveness beginning January 1, 2018, while prior period measurements remain unchanged. See Note 2—Summary of Significant Accounting Policies. The Company records derivatives at fair value. The losses on derivatives designated as cash flow hedges recognized in OCI, before tax effect, consisted of the following (in thousands):

	Year Ended December 31,	
	2018	2017
Derivatives designated as cash flow hedges:		
Interest rate swaps	\$ 2,311	\$ 1,405

The (gains) losses on derivative financial instruments recognized in the consolidated statements of operations, before tax effect, consisted of the following (in thousands):

	Year Ended December 31,			
	2018		2017	
	Interest expense, net	Other (income) expense, net	Interest expense, net	Other (income) expense, net
Total amounts presented in the income statement line items	\$ 65,308	\$ (4,538)	\$ 64,264	\$ 352
Derivatives designated as cash flow hedges:				
Interest rate swaps				
Gains reclassified from AOCI into income	\$ (21,601)	\$ —	\$ (195)	\$ —
Gains recognized in income - ineffective portion:	—	—	—	(921)
Derivatives not designated as hedging instruments:				
Interest rate swaps				
(Gains) losses recognized in income	—	(2,420)	—	1,280
Total (gains) losses	\$ (21,601)	\$ (2,420)	\$ (195)	\$ 359

12 . Investment Funds

As of December 31, 2018, and 2017, the Company had formed investment funds for the purpose of funding the purchase of solar energy systems under long-term customer contracts. The aggregate carrying value of these funds' assets and liabilities (after elimination of intercompany transactions and balances) in the Company's consolidated balance sheets were as follows (in thousands):

	December 31, 2018	December 31, 2017
Assets		
Current assets:		
Cash and cash equivalents	\$ 62,350	\$ 17,280
Accounts receivable, net	6,593	5,143
Prepaid expenses and other current assets	1,289	952
Total current assets	70,232	23,375
Restricted cash and cash equivalents	2,443	—
Solar energy systems, net	1,752,271	1,486,023
Other non-current assets, net	10,888	6,792
Total assets	<u>\$ 1,835,834</u>	<u>\$ 1,516,190</u>
Liabilities		
Current liabilities:		
Distributions payable to non-controlling interests and redeemable non-controlling interests	\$ 7,846	\$ 16,437
Current portion of long-term debt	1,512	—
Current portion of deferred revenue	2,320	9,176
Accrued and other current liabilities	4,860	4,478
Total current liabilities	16,538	30,091
Long-term debt, net of current portion	53,505	—
Deferred revenue, net of current portion	9,694	26,847
Other non-current liabilities	1,023	1,444
Total liabilities	<u>\$ 80,760</u>	<u>\$ 58,382</u>

The Company consolidates the investment funds in which it has an equity interest, and all intercompany balances and transactions between the Company and the investment funds are eliminated in the consolidated financial statements. The Company determined that each of these investment funds meets the definition of a VIE. The Company uses a qualitative approach in assessing the consolidation requirement for VIEs that focuses on determining whether the Company has the power to direct the activities of the VIE that most significantly affect the VIE's economic performance and whether the Company has the obligation to absorb losses or the right to receive benefits that could potentially be significant to the VIE.

The Company has considered the provisions within the contractual arrangements that grant it power to manage and make decisions that affect the operation of these VIEs, including determining the solar energy systems and associated long-term customer contracts to be sold or contributed to the VIE, and installation, operation and maintenance of the solar energy systems. The Company considers that the rights granted to the other investors under the contractual arrangements are more protective in nature rather than participating rights. As such, the Company has determined it is the primary beneficiary of the VIEs for all periods presented. The Company evaluates its relationships with the VIEs on an ongoing basis to ensure that it continues to be the primary beneficiary.

Under the fund agreements, cash distributions of income and other receipts by the funds, net of agreed-upon expenses and estimated expenses, tax benefits and detriments of income and loss, and tax benefits of tax credits, are assigned to the fund investors and the Company's subsidiaries as specified in contractual arrangements. As such, the cash held in investment funds is not readily available to the Company due to the timing of distributions. Certain of these fund arrangements have call and put options to acquire the investor's equity interest as specified in the contractual agreements. Once the investor's equity interest is acquired by the Company, the assets, liabilities and operations of the investment fund become wholly owned and no longer require an assessment of non-controlling interests .

Fund investors for three of the funds are managed indirectly by The Blackstone Group L.P. (the "Sponsor") and are considered related parties. As of December 31, 2018 and 2017, the cumulative total of contributions into the VIEs by all investors was \$1,565.3 million and \$1,264.6 million. Of these contributions, a cumulative total of \$110.0 million was contributed by related parties in prior periods. A third-party provider has agreed to perform backup maintenance services for all funds, if necessary.

Lease Pass-Through Financing Obligation

During 2015, a wholly owned subsidiary of the Company entered into a lease pass-through fund arrangement under which the Company contributed solar energy systems and the investor contributed cash. The net carrying value of the related solar energy systems was \$55.8 million and \$58.2 million as of December 31, 2018 and 2017.

The Company adopted Topic 606 as of January 1, 2018. The Company has assessed the impact of Topic 606 as it relates to the sales of ITCs through its lease pass-through fund arrangement. The Company has concluded that revenue related to the sale of ITCs through its lease pass-through arrangement is recognized when the related solar energy systems are placed in service as the Company has completed its performance obligation to transfer ITCs to the fund investors at that time. The fund investors contributed cash to the investment fund during the installation process as payment for the ITCs. The transaction price for the ITCs was estimated using the tax credit rate of 30% times the fair market value of the solar energy systems that were placed into service in the lease pass-through fund. All of the related solar energy systems were placed in service and all related revenue would have been recognized prior to September 30, 2016 under Topic 606. Prior to the adoption of Topic 606, the Company recognized this revenue evenly over the five-year ITC recapture period. The Company adopted Topic 606 on a modified retrospective basis with a cumulative adjustment to retained earnings as of January 1, 2018. As all ITC sales revenue would have been recognized prior to September 30, 2016 under Topic 606, the Company removed previously recorded deferred revenue related to ITC sales by recording it to retained earnings as of the adoption date of Topic 606. See Note 2—Summary of Significant Accounting Policies.

The Company accounts for the residual of the large upfront payments, net of amounts allocated to the ITCs, and subsequent periodic payments received from the fund investor as a borrowing by recording the proceeds received as a lease pass-through financing obligation, which will be repaid through customer payments that will be received by the investor. Under this approach, the Company continues to account for the arrangement with the customers in its consolidated financial statements, whether the cash generated from the customer arrangements is received by the Company's wholly owned subsidiary or paid directly to the fund investor. A portion of the amounts received by the fund investor from customer payments is applied to reduce the lease pass-through financing obligation, and the balance is allocated to interest expense. The customer payments are recognized into revenue based on cash receipts during the period as required by GAAP. Interest is calculated on the lease pass-through financing obligation using the effective interest rate method. The effective interest rate is the interest rate that equates the present value of the cash amounts to be received by a fund investor over the master lease term with the present value of the cash amounts paid by the investor to the Company, adjusted for any payments made by the Company. Any additional master lease prepayments by the investor would be recorded as an additional lease pass-through financing obligation, while any refunds of master lease prepayments would reduce the lease pass-through financing obligation.

The lease pass-through financing obligation is nonrecourse. As of December 31, 2018, the Company had recorded financing liabilities of \$5.3 million related to this fund arrangement, which was the lease pass-through financing obligation recorded in other liabilities. As of December 31, 2017, the Company had recorded financing liabilities of \$32.1 million related to this fund arrangement, of which \$26.4 million was deferred revenue and \$5.8 million was the lease pass-through financing obligation recorded in other liabilities.

As of December 31, 2018, the future minimum lease payments to be received from the fund investor under the lease pass-through arrangement for each of the next five years and thereafter were as follows (in thousands):

Years Ending December 31,

2019	\$	3,034
2020		3,081
2021		3,128
2022		3,175
2023		3,222
Thereafter		763
Total minimum lease payments to be received	\$	<u>16,403</u>

The fund investor is responsible for services such as warranty support, accounting, lease servicing and performance reporting, which have been outsourced to the Company under administrative and maintenance service agreements.

Guarantees

With respect to the investment funds, the Company and the fund investors have entered into guaranty agreements under which the Company guarantees the performance of certain financial obligations of its subsidiaries to the investment funds. These guarantees do not result in the Company being required to make payments to the fund investors unless such payments are mandated by the investment fund governing documents and the investment fund fails to make such payment. Each of the Company's investment funds and financing subsidiaries maintains separate books and records from each other and from the Company. The assets of each investment fund are not available to satisfy the debts or obligations of any other investment fund, subsidiary or the Company.

The Company is contractually obligated to make certain VIE investors whole for losses that the investors may suffer in certain limited circumstances resulting from the disallowance or recapture of ITCs. The Company has concluded that the likelihood of a significant recapture event is remote and consequently has not recorded any liability in the consolidated financial statements for any potential recapture exposure. The maximum potential future payments that the Company could have to make under this obligation would depend on the IRS successfully asserting upon audit that the fair market values of the solar energy systems sold or transferred to the funds as determined by the Company exceeded the allowable basis for the systems for purposes of claiming ITCs. The fair market values of the solar energy systems and related ITCs are determined and the ITCs are allocated to the fund investors in accordance with the funds' governing agreements. Due to uncertainties associated with estimating the timing and amounts of distributions, the likelihood of an event that may trigger repayment, forfeiture or recapture of ITCs to such investors, and the fact that the Company cannot determine how the IRS will evaluate system values used in claiming ITCs, the Company cannot determine the potential maximum future payments that are required under these guarantees. As of December 31, 2018, the Company has not made any payments under these guarantees. However, several recent investment funds, the 2018-1 Notes and the 2018-2 Notes have required the Company to prepay insurance premiums to cover the risk of ITC recapture. The Company amortizes this prepaid insurance expense over the ITC recapture period. The Company had prepaid insurance balances of \$8.3 million and \$2.4 million as of December 31, 2018 and 2017.

From time to time, the Company incurs fees for non-performance, which non-performance may include, but is not limited to, delays in the installation process and interconnection to the power grid of solar energy systems and other factors. Based on the terms of the investment fund agreements, the Company will either reimburse a portion of the fund investor's capital or pay the fund investor a non-performance fee. Distributions paid to reimburse fund investors totaled \$11.9 million and \$8.4 million for the years ended December 31, 2018 and 2017. As of December 31, 2018, no accrual for additional distributions was required.

As a result of the guaranty arrangements in certain funds, the Company was required to hold a minimum cash balance of \$10.0 million as of December 31, 2018 and 2017, which is classified as restricted cash and cash equivalents.

13. Redeemable Non-Controlling Interests and Equity and Preferred Stock

Common Stock

The Company has 1.0 billion authorized shares of common stock. As of December 31, 2018 and 2017, the Company had 120.1 million and 115.1 million shares of common stock issued and outstanding.

The Company had shares of common stock reserved for issuance as follows (in thousands):

	December 31, 2018	December 31, 2017
Shares available for grant under equity incentive plans	13,323	12,774
Restricted stock units issued and outstanding	6,172	6,688
Stock options issued and outstanding	3,394	3,837
Long-term incentive plan	2,706	2,706
Total	<u>25,595</u>	<u>26,005</u>

Redeemable Non-Controlling Interests and Non-Controlling Interests

During the year ended December 31, 2017, the Company purchased all of the third-party investor's interests in a previously consolidated investment fund for \$1.2 million. The purchase price is included in the caption "Distributions paid to non-controlling interests and redeemable non-controlling interests" in the consolidated statements of cash flows. The equity impact of the purchase is represented by the caption "Acquisition of redeemable non-controlling interests" in the consolidated statements of redeemable non-controlling interests and equity. After the acquisition, the investment fund is now a wholly owned entity of the Company.

Seven of the investment funds include a right for the non-controlling interest holder to require the Company's wholly owned subsidiary to purchase all of its membership interests in the fund (each, a "Put Option"). The purchase price for the fund investor's interest in the seven investment funds under the Put Options is the greater of fair market value at the time the option is exercised and a specified amount, ranging from \$2.1 million to \$4.1 million. The Put Options for these seven investment funds are exercisable beginning on the date that specified conditions are met for each respective fund. None of the Put Options are expected to become exercisable prior to 2021.

Because the Put Options represent redemption features that are not solely within the control of the Company, the non-controlling interests in these investment funds are presented outside of permanent equity. Redeemable non-controlling interests are recorded using the greater of their carrying value at each reporting date (which is impacted by attribution under the HLBV method) or their estimated redemption value in each reporting period.

In all investment funds except one, the Company's wholly owned subsidiary has the right to require the non-controlling interest holder to sell all of its membership units to the Company's wholly owned subsidiary (each, a "Call Option"). The purchase price for the fund investors' interests under the Call Options varies by fund, but is generally the greater of a specified amount, which ranges from approximately \$1.2 million to \$7.0 million, the fair market value of such interest at the time the option is exercised, or an amount that causes the fund investor to achieve a specified return on investment. The Call Options are exercisable beginning on the date that specified conditions are met for each respective fund. None of the Call Options are expected to become exercisable prior to 2020.

Preferred Stock

In October 2014, the Company authorized 10.0 million shares of preferred stock that is issuable in series. As of December 31, 2018 and 2017, there were no series of preferred stock issued or designated.

14. Equity Compensation Plans

Equity Incentive Plans

2014 Equity Incentive Plan

The Company currently grants equity awards through its 2014 Equity Incentive Plan (the "2014 Plan"). Under the 2014 Plan, the Company may grant stock options, restricted stock, restricted stock units ("RSUs"), stock appreciation rights, performance stock units, performance shares and performance awards to its employees, directors and consultants, and its parent and subsidiary corporations' employees and consultants.

As of December 31, 2018, a total of 13.3 million shares of common stock were available for grant under the 2014 plan, subject to adjustment in the case of certain events. In addition, any shares that otherwise would be returned to the Omnibus Plan (as defined below) as the result of the expiration or termination of stock options may be added to the 2014 Plan. The number of shares available to grant under the 2014 Plan is subject to an annual increase on the first day of each year, equal to the least of 8.8 million shares, 4% of the outstanding shares of common stock as of the last day of the immediately preceding fiscal year and an amount of shares as determined by the Company. In accordance with the annual increase, an additional 4.6 million shares became available to grant in January 2018 under the 2014 Plan.

2013 Omnibus Incentive Plan; Non-plan Option Grant

The Company's 2013 Omnibus Incentive Plan (the "Omnibus Plan") was terminated in connection with the adoption of the 2014 Plan in September 2014, and accordingly no additional shares are available for issuance under the Omnibus Plan. The Omnibus Plan will continue to govern outstanding awards granted under the plan. The stock options outstanding under the Omnibus Plan have a ten-year contractual period.

Long-term Incentive Plan

In July 2013, the Company's board of directors approved 4.1 million shares of common stock for six Long-term Incentive Plan Pools ("LTIP Pools") that comprise the 2013 Long-term Incentive Plan (the "LTIP"). Participants in the LTIP are allocated a portion of the LTIP Pools relative to the performance of other participants on a measurement date that is determined once performance conditions are met. As of December 31, 2018, 1.1 million shares of common stock had been awarded to participants under the LTIP and 0.3 million shares had been returned to the 2014 Plan. As of December 31, 2018, 2.7 million shares remained outstanding, which will be granted when certain performance conditions are achieved.

Vesting Terms

As of December 31, 2018, there were 3.4 million time-based stock options and 6.2 million RSUs granted and outstanding under the 2014 Plan. The time-based options are subject to ratable time-based vesting over three to five years. Of the total RSUs outstanding, 4.9 million are subject to ratable time-based vesting over one to four years and 1.3 million vest quarterly or annually over two to four years subject to individual participants' achievement of quarterly or annual performance goals.

Equity Award Modifications

Sales Leader Awards

In July 2018, the Company modified 0.4 million performance-based equity awards for members of its sales leadership team as it was considered improbable that the performance targets would be met. As a result of the modification, the awards are now considered probable of being met, and expense is being recorded accordingly. This was accounted for as a modification; however, there was no incremental expense arising from the modification.

Stock Options

Stock Option Activity

Stock option activity for the year ended December 31, 2018 was as follows (in thousands, except term and per share amounts):

	Shares Underlying Options	Weighted- Average Exercise Price	Weighted- Average Remaining Contractual Term (in years)	Aggregate Intrinsic Value
Outstanding—December 31, 2017	3,837	\$ 2.01		\$ 8,522
Granted	827	3.93		
Exercised	(1,178)	1.14		
Cancelled	(92)	2.27		
Outstanding—December 31, 2018	3,394	\$ 2.77	7.1	\$ 4,689
Options vested and exercisable—December 31, 2018	1,602	\$ 2.31	5.9	\$ 3,065

The weighted-average grant date fair value of options granted during the years ended December 31, 2018 and 2017 was \$3.93 and \$2.25 per share. The total intrinsic value of options exercised for the years ended December 31, 2018 and 2017 was \$4.4 million and \$1.7 million. Intrinsic value is calculated as the difference between the exercise price of the underlying options and the fair value of the common stock for the options that had exercise prices that were lower than the fair value per share of the common stock. The total fair value of options vested for the years ended December 31, 2018 and 2017 was \$1.7 million, \$1.5 million.

Determination of Fair Value of Stock Options

The Company estimates the fair value of the time-based stock options granted on each grant date using the Black-Scholes-Merton option pricing model and applies the accelerated attribution method for expense recognition.

The fair values using the Black-Scholes-Merton method were estimated on each grant date using the following weighted-average assumptions:

	Year Ended December 31,	
	2018	2017
Expected term (in years)	6.2	6.2
Volatility	70.7%	75.3%
Risk-free interest rate	2.8%	2.1%
Dividend yield	0.0%	0.0%

Use of the Black-Scholes-Merton option-pricing model requires the input of highly subjective assumptions, including (1) the expected term of the option, (2) the expected volatility of the price of the Company's common stock, (3) risk-free interest rates and (4) the expected dividend yield of the Company's common stock. The assumptions used in the option-pricing model represent management's best estimates. These estimates involve inherent uncertainties and the application of management's judgment. If factors change and different assumptions are used, the Company's stock-based compensation expense could be materially different in the future.

These assumptions and estimates are as follows:

- *Expected Term.* The expected term represents the period that the Company's option awards are expected to be outstanding. The Company utilized the simplified method in estimating the expected term of its options granted. The simplified method deems the term to be the average of the time to vesting and the contractual life of the options.
- *Expected Volatility.* The volatility is derived from the average historical stock volatilities of the Company and a peer group of public companies within the Company's industry that it considers to be comparable to its business over a period equivalent to the expected term of the stock-based grants. The Company did not rely on implied volatilities of traded options in its own or the industry peers' common stock because of the low volume of activity.
- *Risk-Free Interest Rate.* The risk-free interest rate is based on the U.S. Treasury yield curve in effect at the time of grant for zero-coupon U.S. Treasury notes with maturities approximately equal to the option's expected term.
- *Dividend Yield.* The Company has never declared or paid any cash dividends and does not presently plan to pay cash dividends in the foreseeable future. Consequently, the Company used an expected dividend yield of zero.

RSUs

RSU activity for the year ended December 31, 2018 was as follows (awards in thousands):

	Number of Awards	Weighted- Average Grant Date Fair Value
Outstanding at December 31, 2017	6,688	\$ 3.20
Granted	3,986	4.13
Vested	(3,837)	3.09
Forfeited	(665)	3.48
Outstanding at December 31, 2018	6,172	\$ 3.84

The total fair value of RSUs vested was \$16.9 million and \$12.0 million, for the years ended December 31, 2018 and 2017. The Company determined the fair value of RSUs granted on each grant date based on the fair value of the Company's common stock on the grant date.

Stock-Based Compensation Expense

Stock-based compensation was included in operating expenses as follows (in thousands):

	Year Ended December 31,	
	2018	2017
Cost of revenue	\$ 1,333	\$ 993
Sales and marketing	3,353	4,084
General and administrative	8,344	7,649
Research and development	133	191
Total stock-based compensation	\$ 13,163	\$ 12,917

The recognized income tax benefit related to share-based compensation was \$1.4 million for the year ended December 31, 2018. There was no recognized income tax benefit related to share-based compensation for the year ended December 31, 2017.

Unrecognized stock-based compensation expense for time-based stock options and RSUs as of December 31, 2018 was as follows (in thousands, except years):

	Unrecognized Stock-Based Compensation Expense	Weighted- Average Period of Recognition (in years)
RSUs	\$ 15,240	1.7
Stock options	1,971	1.8
Total unrecognized stock-based compensation expense	<u>\$ 17,211</u>	

15. Income Taxes

Income tax expense (benefit) is composed of the following (in thousands):

	Year Ended December 31,	
	2018	2017
Current:		
Federal	\$ (665)	\$ (9,233)
State	102	(8,864)
Total current benefit	(563)	(18,097)
Deferred:		
Federal	79,048	(154,316)
State	27,814	15,080
Total deferred expense (benefit)	106,862	(139,236)
Income tax expense (benefit)	<u>\$ 106,299</u>	<u>\$ (157,333)</u>

The Company operates in only one federal jurisdiction, the United States. The following table presents a reconciliation of the income tax benefit computed at the statutory federal rate and the Company's income tax expense (benefit) (in thousands):

	Year Ended December 31,	
	2018	2017
Income tax benefit—computed as 21% and 35% of pretax loss in 2018 and 2017	\$ (36,385)	\$ (52,102)
Effect of non-controlling interests and redeemable non-controlling interests	55,434	70,219
Amortization of prepaid tax asset	—	15,287
Effect of nondeductible expenses	1,809	2,781
State and local income tax expenses (net of federal benefit)	22,054	4,040
Tax gains on sale of solar energy systems to investment funds	68,683	—
Effect of tax credits	(2,684)	(11,849)
Effect of federal tax rate reduction from 35% to 21%	—	(187,501)
Other	(2,612)	1,792
Income tax expense (benefit)	<u>\$ 106,299</u>	<u>\$ (157,333)</u>

The TCJA made significant changes to the U.S. tax code, which include, but are not limited to, a reduced U.S. federal corporate tax rate, a provision that limits the amount of deductible interest expense, full expensing of acquired property, limitations on the utilization of NOL carryforwards, the repeal of the domestic production activity deduction, limitations on the deductibility of certain executive compensation, and the tax year of income inclusion. The Company recorded a provisional net deferred tax benefit of \$187.5 million related to the remeasurement of its deferred tax balances to reflect the corporate rate reduction in the period ending December 31, 2017. The Company has completed its analysis of the tax effects of the TCJA and determined there should be no adjustment to the amount previously recorded.

Deferred income taxes reflect the impact of temporary differences between assets and liabilities for financial reporting purposes and the amounts recognized for income tax reporting purposes, net operating loss carryforwards and other tax credits. The differences are measured by applying currently enacted tax laws. The significant components of the Company's deferred tax assets and liabilities were as follows (in thousands):

	December 31,	
	2018	2017
Deferred tax assets:		
Accruals and reserves	\$ 7,306	\$ 4,154
Stock-based compensation	4,204	5,047
Tax credits	47,131	43,071
Net operating losses	13,662	5,847
Depreciation and amortization	2,063	2,160
Interest rate swaps	2,982	—
Other	1,149	324
Gross deferred tax assets	78,497	60,603
Valuation allowance	(306)	(329)
Net deferred tax assets	78,191	60,274
Deferred tax liabilities:		
Investment in solar funds	(483,522)	(361,284)
Depreciation and amortization	(31,035)	(37,121)
Interest rate swaps	—	(3,458)
Accruals and reserves	(754)	(793)
Gross deferred tax liabilities	(515,311)	(402,656)
Net deferred tax liabilities	\$ (437,120)	\$ (342,382)

The Company sells solar energy systems to the investment funds for income tax purposes. As the investment funds are consolidated by the Company, the gain on the sale of the solar energy systems is eliminated in the consolidated financial statements. However, this gain is recognized for tax reporting purposes. With the adoption of ASU 2016-16, the Company now accounts for the income tax consequences of these intra-entity transfers, both current and deferred, as a component of income tax expense and deferred tax liability, net during the period in which the transfers occur. Prior to the adoption of ASU 2016-16, any tax expense incurred related to these intra-entity sales was deferred and amortized over the estimated useful life of the underlying solar energy systems, which was estimated to be 30 years. Accordingly, the Company had recorded a prepaid tax asset, net, of \$505.9 million as of December 31, 2017, which was removed as of January 1, 2018 when the Company adopted ASU 2016-16. See Note 2—Summary of Significant Accounting Policies.

The Company had federal net operating loss carryforwards (“NOLs”) of approximately \$13.9 million available to offset future federal taxable income as of December 31, 2018. The Company's federal NOLs do not expire. The Company had no federal NOLs as of December 31, 2017. The Company had state NOLs of approximately \$175.3 million and \$95.5 million available to offset future state taxable income as of December 31, 2018 and 2017. The NOLs expire in varying amounts from 2029 through 2038 for state tax purposes if unused. As of December 31, 2018 and 2017, the Company recognized a valuation allowance of \$0.3 million for the existing state NOLs and other existing state tax attributes due to state-imposed limitations on their utilization.

The Company reported federal business tax credit carryforwards, primarily composed of ITCs, of \$45.7 million and \$42.8 million for the years ended December 31, 2018 and 2017. These federal business tax credits expire in varying amounts from 2036 through 2038 if unused. The Company accounts for its federal business tax credits as a reduction of income tax expense in the year in which the credits arise. The Company reported AMT credits of \$0.5 million and \$0.9 million for the years ended December 31, 2018 and 2017. As of December 31, 2018 and 2017, the Company had \$0.6 million and \$11.1 million of federal income tax refunds receivable which were recorded in prepaid expenses and other current assets. As of December 31, 2018 and 2017, the Company had \$9.3 million and \$9.7 million of state income tax refunds receivable which were recorded in prepaid expenses and other current assets.

The Company expects to produce sufficient future taxable income, including from the future reversal of deferred tax liabilities, of the necessary character and in the necessary periods and jurisdictions to support the realization of the deferred tax assets. As such, no valuation allowance is required except for as previously noted.

Uncertain Tax Positions

As of December 31, 2018, the total amount of gross unrecognized tax benefits was \$0.6 million, of which \$0.5 million, if recognized, would impact the Company's effective tax rate. There were no unrecognized tax benefits recorded as of December 31, 2017.

The aggregate changes in the balance of gross unrecognized tax benefits, which excludes interest and penalties, for 2018 and 2017, is as follows (in thousands):

	Year Ended December 31,	
	2018	2017
Beginning balance	\$ —	\$ —
Increases related to positions from a prior year	447	—
Increases related to positions from the current year	108	—
Ending balance	\$ 555	\$ —

The Company's policy is to include interest and penalties related to unrecognized tax benefits, if any, within the provision for income taxes. There were no interest and penalties accrued for any unrecognized tax benefits as of December 31, 2018 and 2017. The Company does not have any tax positions for which it is reasonably possible the total amount of gross unrecognized tax benefits will significantly increase or decrease within 12 months of the year ended December 31, 2018. The Company is subject to taxation and files income tax returns in the United States and various state and local jurisdictions. The U.S. and state jurisdictions in which the Company operates have statutes of limitations that generally range from three to four years. The Company's federal, state and local income tax returns starting with the 2015 tax year are subject to audit. The Company's 2014 income tax returns for four states are also subject to audit.

16. Related Party Transactions

The Company's operations included the following expenses from related party transactions (in thousands):

	Year Ended December 31,	
	2018	2017
Cost of revenue—operating leases and incentives	\$ —	\$ 701
Sales and marketing	2,158	2,643
General and administrative	—	139

Vivint Services

The Company has negotiated and entered into a number of agreements with its sister company, Vivint. Some of those agreements related to the Company's use of certain of Vivint's information technology and infrastructure services; however, the Company stopped using such services in July 2017. In August 2017, the Company entered into a sales dealer agreement with Vivint, pursuant to which each company will act as a non-exclusive dealer for the other party to market, promote and sell each other's products. The agreement has an initial term of two years and replaces substantially all of the activities being undertaken under the parties' former marketing and customer relations agreement. The Company and Vivint also agreed to extend the term of the non-solicitation provisions under an existing non-competition agreement to match the term of the sales dealer agreement.

The Company incurred fees under agreements with Vivint of \$16.3 million and \$2.5 million for the years ended December 31, 2018, and 2017. These amounts reflect the level of services provided by Vivint on behalf of the Company.

Payables to Vivint recorded in accounts payable were \$0.2 million as of December 31, 2018 and 2017. These payables include amounts due to Vivint related primarily to the sales dealer agreement.

Advances Receivable — Related Party

Net amounts due from direct-sales personnel were \$5.2 million and \$6.6 million as of December 31, 2018 and 2017. The Company provided a reserve of \$0.9 million and \$1.0 million as of December 31, 2018 and 2017 related to advances to direct-sales personnel who have terminated their employment agreement with the Company.

Investment Funds

Fund investors for three of the investment funds are indirectly managed by the Sponsor and accordingly are considered related parties. The Company accrued equity distributions to these entities of \$1.5 million and \$1.2 million as of December 31, 2018 and 2017, included in distributions payable to non-controlling and redeemable non-controlling interests. See Note 12—Investment Funds.

17. Commitments and Contingencies

Non-Cancellable Operating Leases

In May 2016, the Company commenced a lease for its current headquarters in Lehi, Utah. The headquarters lease is classified and accounted for as a non-cancellable operating lease. The lease term is 12 years, with the option to extend for two additional periods of five years. The base rent for this building commenced at approximately \$0.3 million per month and will increase over the term of the lease, as amended, at a rate of 2.5% annually.

In July 2015, the Company entered into a non-cancellable lease for a second office building on the corporate headquarters campus. Subsequently in October 2016, the lease was amended resulting in a new anticipated lease commencement date of January 1, 2020. The second office building will provide approximately 150,000 square feet of office space. The lease term is 12 years, with the option to extend for two additional periods of five years. The monthly rent payments will commence at approximately \$0.4 million and increase at a rate of 2.5% annually. As a result, the Company expects to make total lease payments of \$57.7 million over the initial term of the lease.

The Company has entered into lease agreements for warehouses and related equipment located in states in which the Company conducts operations. The warehouse lease agreements, including subsequent extensions to the original term, range from one to seven years, with the majority having a term of five years. The equipment lease agreements range from three to five years, and include basic renewal options for an additional set period, continued renting by the month, or return of the unit.

For all non-cancellable lease arrangements, there are no bargain renewal options, penalties for failure to renew, or any guarantee by the Company of the lessor's debt or a loan from the Company to the lessor related to the leased property. Aggregate lease expense for these non-cancellable operating lease arrangements was \$14.7 million and \$16.3 million for the years ended December 31, 2018 and 2017. For operating leases having initial or remaining lease terms in excess of one year, the total minimum rental payments to be received under noncancelable subleases was \$0.1 million as of December 31, 2018. Rental payments received under non-cancellable subleases are recorded as a reduction to operating lease expense.

Future minimum lease payments under non-cancellable operating leases as of December 31, 2018 were as follows (in thousands):

<u>Years Ending December 31,</u>		
2019	\$	11,250
2020		11,803
2021		11,669
2022		10,100
2023		9,393
Thereafter		63,762
Total minimum lease payments	\$	<u>117,977</u>

Letters of Credit

As of December 31, 2018, the Company had established letters of credit under the Working Capital Facility for up to \$13.9 million related to insurance contracts. See Note 10—Debt Obligations.

Indemnification Obligations

From time to time, the Company enters into contracts that contingently require it to indemnify parties against claims. These contracts primarily relate to provisions in the Company's services agreements with related parties that may require the Company to indemnify the related parties against services rendered; and certain agreements with the Company's officers and directors under which the Company may be required to indemnify such persons for liabilities. In addition, under the terms of the agreements related to the Company's investment funds and other material contracts, the Company may also be required to indemnify fund investors and other third parties for liabilities. Distributions paid to reimburse fund investors totaled \$11.9 million and \$8.4 million for the years ended December 31, 2018 and 2017. As of December 31, 2018, no accrual for additional distributions was necessary.

Residual Commission Payments

The Company pays a portion of sales commissions to its sales representatives on a deferred basis. The amount deferred is based on the value of the system sold by the sales representative and payment is based on the sales representative remaining employed by the Company. As this amount is earned over time, it is not considered an initial direct cost of obtaining the contract due to the requirement that the sales representative remain in the Company's service. As a result, the amount that is earned over time is expensed by the Company over the deferral period. As of December 31, 2018, the total estimated obligation that is currently not recorded in the Company's consolidated financial statements, but that will be earned and expensed over the deferral period was \$15.5 million.

Legal Proceedings

In March 2016, the Company filed suit in the Court of Chancery State of Delaware against SunEdison and SEV Merger Sub Inc. alleging that SunEdison willfully breached its obligations under the Merger Agreement pursuant to which the Company was to be acquired and breached its implied covenant of good faith and fair dealing. In April 2016, SunEdison filed for Chapter 11 bankruptcy, which stayed prosecution of the Company's litigation in the Delaware court. In September 2016, the Company submitted a proof of claim in the bankruptcy case for an unsecured claim in the initial amount of \$1.0 billion, which was subject to dispute, for damages for breach of the Merger Agreement. In April 2018, the Company reached a settlement with the litigation trustee in the bankruptcy case under which the Company's claim will be allowed in the amount of \$590.0 million. This settlement resolves both the lawsuit in the Delaware Chancery Court and the dispute about the amount of the Company's unsecured creditor claim in the bankruptcy. In April 2018, the Company received an initial distribution of \$2.1 million and expects to receive further distributions as assets are distributed to unsecured creditors under the court-approved plan of reorganization in the SunEdison bankruptcy case. While the exact amount to be distributed for this claim is unknown at this time, the payout is expected to be a small fraction of the \$590.0 million claim.

In February 2018, two former employees, on behalf of themselves and a purported class, named the Company in a putative class action alleging that the Company misclassified those employees and violated other wage and hour laws. The complaint seeks unspecified damages and statutory penalties for the alleged violations. The Company disputes the allegations and has retained counsel to defend it in the litigation. If an unfavorable outcome were to occur in this case, it is possible that the impact could be material to the Company's results of operations in the period or periods in which any such outcome becomes probable and estimable.

In March 2018, the New Mexico Attorney General's office filed an action against the Company and several of its officers alleging violation of state consumer protection statutes and other claims. The Company disputes the allegations in the lawsuit and intends to defend itself in the action. The Company is unable to estimate a range of loss, if any, were there to be an adverse final decision. If an unfavorable outcome were to occur in this case, it is possible that the impact could be material to the Company's results of operations in the period(s) in which any such outcome becomes probable and estimable.

In June 2018, four of the Company's customers, on behalf of themselves and a purported class, named the Company in a putative class action alleging violations of the Consumers Legal Remedies Act and California Business and Professions Code Section 17200 and requesting relief pursuant to Section 1689 of the California Civil Code. The complaint sought (1) rescission of their PPAs along with restitution to the plaintiffs individually and (2) declaratory and injunctive relief. The Company disputes the allegations in the complaint and intends to vigorously defend itself. On November 14, 2018, the Company entered into a settlement agreement with the four customers whereby the customers agreed to dismiss the putative class action in exchange for rescission of their contracts, removal of the systems that the Company installed on their properties, immaterial compensation payments to each customer and an immaterial payment for attorneys' fees and costs.

In July 2018, an individual filed a putative class action lawsuit in the U.S. District Court for the District of Columbia, purportedly on behalf of himself and other persons who received certain telephone calls. The lawsuit alleges that the Company violated the Telephone Consumer Protection Act and some of its implementing regulations. The complaint seeks statutory penalties for each alleged violation. The Company disputes the allegations in the complaint, has retained counsel and intends to vigorously defend itself in the litigation. The Company is unable to estimate the amount or range of potential loss, if any, at this time.

In October 2018, a former employee filed a representative action pursuant to California's Private Attorneys General Act alleging that the Company violated California labor and employment laws by, among other things, failing to provide its employees with rest and meal breaks. The Company disputes the allegations in the complaint and has retained counsel to represent it in the litigation. The Company is unable to estimate a range of loss, if any, at this time. If an unfavorable outcome were to occur in the case, it is possible that the impact could be material to the Company's results of operations in the period(s) in which any such outcome becomes probable and estimable.

In October 2018, a former sales representative filed a representative action pursuant to California's Private Attorneys General Act alleging that the Company violated California labor and employment laws by, among other things, failing to properly compensate its direct sellers and reimburse them for business expenses. The Company disputes the allegations in the complaint and has filed a motion to dismiss the complaint, which is pending. The Company is unable to estimate a range of loss, if any, at this time. If an unfavorable outcome were to occur in the case, it is possible that the impact could be material to the Company's results of operations in the period(s) in which any such outcome becomes probable and estimable.

In addition to the matters discussed above, in the normal course of business, the Company has from time to time been named as a party to various legal claims, actions and complaints. While the outcome of these matters cannot be predicted with certainty, the Company does not currently believe that the outcome of any of these claims will have a material adverse effect, individually or in the aggregate, on its consolidated financial position, results of operations or cash flows.

The Company accrues for losses that are probable and can be reasonably estimated. The Company evaluates the adequacy of its legal reserves based on its assessment of many factors, including interpretations of the law and assumptions about the future outcome of each case based on available information.

18. Basic and Diluted Net (Loss) Income Per Share

The Company computes basic net income per share by dividing net (loss) income available to common stockholders by the weighted-average number of common shares outstanding for the period. Diluted earnings per share reflects the potential dilution of securities that could be exercised or converted into common shares, and is computed by dividing net earnings available to common stockholders by the weighted-average number of common shares outstanding plus the effect of potentially dilutive shares to purchase common stock.

The following table sets forth the computation of the Company's basic and diluted net (loss) income available per share to common stockholders for the years ended December 31, 2018 and 2017 (in thousands, except per share amounts):

	Year Ended December 31,	
	2018	2017
Numerator:		
Net (loss attributable) income available to common stockholders	\$ (15,592)	\$ 209,098
Denominator:		
Shares used in computing net (loss attributable) income available per share to common stockholders, basic	117,565	113,132
Weighted-average effect of potentially dilutive shares to purchase common stock	—	5,136
Shares used in computing net (loss attributable) income available per share to common stockholders, diluted	117,565	118,268
Net (loss attributable) income available per share to common stockholders:		
Basic	\$ (0.13)	\$ 1.85
Diluted	\$ (0.13)	\$ 1.77

For the year ended December 31, 2018, the Company incurred a net loss attributable to common stockholders. As such, the potentially dilutive shares were anti-dilutive and were not considered in the weighted-average number of common shares outstanding for that period. For the year ended December 31, 2017, 1.0 million shares were excluded from the dilutive share calculations as the effect on net income per share would have been antidilutive.

19. Subsequent Events

Lease Amendments

In February 2019, the Company terminated the lease for the second office building to be constructed adjacent to its corporate headquarters. The terminated lease included the entire building and, prior to termination, was expected to commence on January 1, 2020. Concurrent with the termination of the lease for the second building, the Company entered into a new lease for approximately 32,000 square feet of the second office building. This lease is expected to commence on January 1, 2020, and the initial term is approximately 11.5 years, with two options to extend the lease for five years. The Company expects to make total rent payments of approximately \$11.2 million over the initial term. Additionally, the Company agreed to amend the lease for its current corporate headquarters to extend the lease for an additional 3 years to 2031 and expects to make total additional rent payments of approximately \$14.6 million over the term extension.

Item 9. Changes in and Disagreements with Accountants on Accounting and Financial Disclosure.

None.

Item 9A. Controls and Procedures.

Internal Control Over Financial Reporting

Evaluation of Disclosure Controls and Procedures

Our management, with the participation of our chief executive officer and chief financial officer, evaluated the effectiveness of our disclosure controls and procedures as of December 31, 2018 pursuant to Rule 13a-15 under the Securities Exchange Act of 1934, as amended (the "Exchange Act"). The term "disclosure controls and procedures," as defined in Rules 13a-15(e) and 15d-15(e) under the Exchange Act, means controls and other procedures of a company that are designed to ensure that information required to be disclosed by a company in the reports that it files or submits under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in the SEC's rules and forms. Disclosure controls and procedures include, without limitation, controls and procedures designed to ensure that information required to be disclosed by a company in the reports that it files or submits under the Exchange Act is accumulated and communicated to the company's management, including its principal executive and principal financial officers, as appropriate to allow timely decisions regarding required disclosure.

Management's Report on Internal Control over Financial Reporting

Our management is responsible for establishing and maintaining adequate internal control over financial reporting (as defined by Rule 13a-15(f) under the Exchange Act). In assessing the effectiveness of our internal control over financial reporting as of December 31, 2018, our management used the criteria set forth by the Committee of Sponsoring Organizations of the Treadway Commission (2013 framework).

Based on our assessment using those criteria, our management has concluded that our internal control over financial reporting was effective as of December 31, 2018.

Inherent Limitation on the Effectiveness of Internal Control

The effectiveness of any system of internal control over financial reporting, including ours, is subject to inherent limitations, including the exercise of judgment in designing, implementing, operating, and evaluating the controls and procedures, and the inability to eliminate misconduct completely. Accordingly, any system of internal control over financial reporting, including ours, no matter how well designed and operated, can only provide reasonable, not absolute assurances. The nature of our investment funds increases the complexity of our accounting for the allocation of net (loss) income between our stockholders and non-controlling interests under the HLBV method and the calculation of our tax provision. As we enter into additional investment funds, which may have contractual provisions different from those of our existing funds, the calculation under the HLBV method and the calculation of our tax provision could become increasingly complicated. This additional complexity could increase the chance that we experience a material weakness in the future. In addition, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate. We intend to continue to monitor and upgrade our internal controls as necessary or appropriate for our business, but cannot assure you that such improvements will be sufficient to provide us with effective internal control over financial reporting.

We will be required to engage an independent registered public accounting firm to opine on the effectiveness of our internal control over financial reporting beginning at the date we are no longer an emerging growth company as defined in the JOBS Act. At such time, our management may conclude that our internal control over financial reporting is not effective. Moreover, even if our management concludes that our internal control over financial reporting is effective, our independent registered public accounting firm may issue a report that is adverse if such firm is not satisfied with the level at which our controls are documented, designed, operated or reviewed. As a result, we may need to undertake various actions, such as implementing new internal controls and procedures and hiring additional accounting or internal audit staff.

Changes in Internal Control over Financial Reporting

There were no changes in our internal control over financial reporting during the year ended December 31, 2018 that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

Item 9B. Other Information.

None.

PART III

Item 10. Directors, Executive Officers and Corporate Governance.

The information required by this Item 10 of Form 10-K will be found in our 2018 Proxy Statement to be filed with the SEC in connection with the solicitation of proxies for our 2019 Annual Meeting of Stockholders, or the 2018 Proxy Statement, and is incorporated by reference to our 2018 Proxy Statement. The 2018 Proxy Statement will be filed with the SEC within 120 days after the end of the fiscal year to which this report relates.

Item 11. Executive Compensation.

The information required by this Item 11 of Form 10-K will be found in our 2018 Proxy Statement and is incorporated here by reference to our 2018 Proxy Statement.

Item 12. Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters.

The information required by this Item 12 of Form 10-K will be found in our 2018 Proxy Statement and is incorporated here by reference to our 2018 Proxy Statement.

Item 13. Certain Relationships and Related Transactions, and Director Independence.

The information required by this Item 13 of Form 10-K will be found in our 2018 Proxy Statement and is incorporated here by reference to our 2018 Proxy Statement.

Item 14. Principal Accounting Fees and Services.

The information required by this Item 14 of Form 10-K will be found in our 2018 Proxy Statement and is incorporated here by reference to our 2018 Proxy Statement.

PART IV

Item 15. Exhibits, Financial Statement Schedules.

(a)(1.) Consolidated Financial Statements:

The following documents are filed as a part of this Annual Report on Form 10-K for Vivint Solar, Inc.:

Report of Ernst & Young LLP, Independent Registered Public Accounting Firm.

Consolidated Balance Sheets as of December 31, 2018 and 2017.

Consolidated Statements of Operations for the years ended December 31, 2018 and 2017.

Consolidated Statements of Comprehensive (Loss) Income for the years ended December 31, 2018 and 2017.

Consolidated Statements of Redeemable Non-Controlling Interest and Stockholders' Equity for the years ended December 31, 2018 and 2017.

Consolidated Statements of Cash Flows for the years ended December 31, 2018 and 2017.

Notes to the Consolidated Financial Statements.

(2.) Financial Statement Schedules:

Financial statement schedules are omitted because they are not required, not applicable or because the required information is shown in the consolidated financial statements or notes thereto.

(3.) Exhibits:

Required exhibits are incorporated by reference or are filed with this Annual Report on Form 10-K as set forth in the following Exhibit Index, which immediately precedes such exhibits.

Exhibit Index

<u>Exhibit Number</u>	<u>Description</u>	<u>Form</u>	<u>File No.</u>	<u>Incorporated by Reference</u>	<u>Filing Date</u>
3.1	Amended and Restated Certificate of Incorporation of the Company	10-Q	001-36642	3.1	November 12, 2014
3.2	Amended and Restated Bylaws of the Company	10-Q	001-36642	3.2	November 12, 2014
4.1	Registration Rights Agreement, dated as of October 6, 2014, by and among the Company and the investors named therein	10-K	001-36642	4.1	March 13, 2015
10.1+	Form of Director and Executive Officer Indemnification Agreement	S-1	333-198372	10.1	August 26, 2014
10.2+	2013 Omnibus Incentive Plan, as amended	S-1	333-198372	10.2	August 26, 2014
10.3+	Form of Stock Option Agreement under the 2013 Omnibus Incentive Plan	10-Q	001-36642	10.17	November 12, 2014
10.4+	2014 Equity Incentive Plan	S-1/A	333-198372	10.3	September 18, 2014
10.5+	Form of Notice of Stock Option Grant and Stock Option Agreement under the 2014 Equity Incentive Plan	10-Q	001-36642	10.15	November 12, 2014
10.6+	Form of Notice of Restricted Stock Unit Grant and Restricted Stock Unit Agreement under the 2014 Equity Incentive Plan	10-Q	001-36642	10.16	November 12, 2014
10.7+	Amended and Restated 2013 Long-Term Incentive Pool Plan for District Sales Managers, and forms of agreements thereunder	S-1	333-198372	10.4A	August 26, 2014
10.8+	Amended and Restated 2013 Long-Term Incentive Pool Plan for Operations Leaders, and forms of agreements thereunder	S-1	333-198372	10.4B	August 26, 2014
10.9+	Amended and Restated 2013 Long-Term Incentive Pool Plan for Recruiting Regional Sales Managers, and forms of agreements thereunder	10-K	001-36642	10.9	March 13, 2015
10.10+	Amended and Restated 2013 Long-Term Incentive Pool Plan for Regional Managers (Technicians), and forms of agreements thereunder	S-1	333-198372	10.4D	August 26, 2014
10.11+	Amended and Restated 2013 Long-Term Incentive Pool Plan for Regional Sales Managers, and forms of agreements thereunder	S-1	333-198372	10.4E	August 26, 2014
10.12+	Amended and Restated 2013 Long-Term Incentive Pool Plan for Sales Managers, and forms of agreements thereunder	S-1	333-198372	10.4F	August 26, 2014
10.13+	Form of 313 Acquisition LLC Unit Plan	S-1/A	333-198372	10.5	September 18, 2014

<u>Exhibit Number</u>	<u>Description</u>	<u>Form</u>	<u>File No.</u>	<u>Incorporated by Reference</u>	<u>Filing Date</u>
10.14+	<u>Executive Incentive Compensation Plan, and forms of agreements thereunder</u>	S-1	333-198372	10.6	August 26, 2014
10.15+	<u>Form of Involuntary Termination Protection Agreement between the Company and certain of its officers</u>	S-1	333-198372	10.7	August 26, 2014
10.16+	<u>Offer Letter, dated as of May 2, 2016, by and between the Company and David Bywater</u>	10-Q	001-36642	10.2	August 8, 2016
10.17+	<u>Letter Agreement, dated as of December 14, 2016, by and between the Company and David Bywater</u>	10-K	001-36642	10.17	March 16, 2017
10.18+	<u>Involuntary Termination Protection Agreement, dated as of December 14, 2016, by and between the Company and David Bywater</u>	10-K	001-36642	10.18	March 16, 2017
10.19+	<u>Letter Agreement, dated as of August 28, 2014, with Dana C. Russell</u>	10-K	001-36642	10.17	March 13, 2015
10.20+	<u>Letter Agreement, dated as of July 19, 2015, by and between the Company and Dana C. Russell</u>	10-Q	001-36642	10.5	November 16, 2015
10.21+	<u>Letter Agreement, dated as of May 7, 2018, by and between the Company and Dana C. Russell</u>	10-Q	001-36642	10.3	May 8, 2018
10.22+*	<u>Executive Employment Agreement, dated as of January 1, 2019, by and between the Company and Thomas Plagemann</u>				
10.23+	<u>Offer Letter, dated June 16, 2016, by and between the Company and Bryan Christiansen</u>	10-Q	001-36642	10.1	May 8, 2018
10.24+	<u>Involuntary Termination Protection Agreement, dated June 17, 2016, by and between the Company and Bryan Christiansen</u>	10-Q	001-36642	10.2	May 8, 2018
10.25†	<u>Pledge and Security Agreement, dated as of September 12, 2014, by and among Vivint Solar Financing I, LLC, Bank of America, N.A. and the parties named therein</u>	S-1/A	333-198372	10.46	September 18, 2014
10.26†	<u>Second Amended and Restated Loan Agreement, dated as of March 9, 2017, by and among Vivint Solar Financing I, LLC, Vivint Solar Financing I Parent, LLC, Bank of America, N.A. and the parties named therein</u>	10-Q	001-36642	10.1	May 9, 2017

<u>Exhibit Number</u>	<u>Description</u>	<u>Form</u>	<u>File No.</u>	<u>Incorporated by Reference</u>	<u>Filing Date</u>
10.27†	<u>Second Amended and Restated Collateral Agency and Depositary Agreement, dated as of March 9, 2017, by and among Vivint Solar Financing I, LLC, Vivint Solar Financing I Parent, LLC, Vivint Solar Fund XV Manager, LLC, Vivint Solar Owner I, LLC, Bank of America, N.A. and the parties named therein</u>	10-Q	001-36642	10.2	May 9, 2017
10.28†	<u>Fixed Rate Loan Agreement, dated as of January 5, 2017, by and among, Vivint Solar Financing III, LLC, the lenders party thereto, and Wells Fargo Bank, National Association</u>	10-K	001-36642	10.38	March 16, 2017
10.29†	<u>Amended and Restated Credit Agreement, dated as of October 10, 2017, by and among the Company, Goldman Sachs Lending Partners LLC, Goldman Sachs Lending Partners LLC, Credit Suisse Securities (USA) LLC, Barclays Bank plc, Citibank, N.A. and Morgan Stanley Senior Funding, Inc.</u>	10-K	001-36642	10.85	March 7, 2018
10.30	<u>Indenture dated as of June 11, 2018 between Vivint Solar Financing V, LLC and Wells Fargo Bank, National Association</u>	10-Q	001-36642	10.1	August 7, 2018
10.31	<u>Indenture dated as of June 11, 2018 between Vivint Solar Financing IV, LLC and Wells Fargo Bank, National Association</u>	10-Q	001-36642	10.2	August 7, 2018
10.32†	<u>Loan Agreement, among Vivint Solar Asset 1 Project Company, LLC, Wells Fargo Bank, National Association, and the parties named therein, dated as of August 3, 2018</u>	10-Q/A	001-36642	10.1	March 4, 2019
10.33	<u>Stockholders Agreement, dated as of October 6, 2014, by and among the Company and other parties thereto</u>	10-K	001-36642	10.24	March 13, 2015
10.34	<u>Master Intercompany Framework Agreement, dated as of September 30, 2014, by and between the Company and Vivint, Inc.</u>	10-Q	001-36642	10.1	November 12, 2014
10.35	<u>Transition Services Agreement, dated as of September 30, 2014, by and between the Company and Vivint, Inc.</u>	10-Q	001-36642	10.2	November 12, 2014
10.36	<u>Non-Competition Agreement, dated as of September 30, 2014, by and between the Company and Vivint, Inc.</u>	10-Q	001-36642	10.3	November 12, 2014
10.37	<u>Amendment No. 1 to Non-Competition Agreement, dated as of August 16, 2017, by and between Vivint Solar, Inc. and Vivint, Inc.</u>	10-Q	001-36642	10.1	November 7, 2017

<u>Exhibit Number</u>	<u>Description</u>	<u>Form</u>	<u>File No.</u>	<u>Incorporated by Reference</u>	<u>Filing Date</u>
10.3 8	<u>Product Development and Supply Agreement, dated as of September 30, 2014, by and between Vivint Solar Developer, LLC and Vivint, Inc.</u>	10-Q	001-36642	10.4	November 12, 2014
10.39	<u>Marketing and Customer Relations Agreement, dated as of September 30, 2014, by and between Vivint Solar Developer, LLC and Vivint, Inc.</u>	10-Q	001-36642	10.5	November 12, 2014
10.40	<u>Trademark Assignment Agreement, dated as of September 30, 2014, by and between Vivint Solar Licensing LLC and Vivint, Inc.</u>	10-Q	001-36642	10.6	November 12, 2014
10.41	<u>Trademark Assignment Agreement, dated as of September 30, 2014, by and between the Company and Vivint, Inc.</u>	10-Q	001-36642	10.7	November 12, 2014
10.42	<u>Bill of Sale and Assignment, dated as of September 30, 2014, by and between the Company and Vivint, Inc.</u>	10-Q	001-36642	10.9	November 12, 2014
10.43	<u>Limited Liability Company Agreement of Vivint Solar Licensing, LLC, dated as of September 30, 2014, by and between the Company and Vivint, Inc.</u>	10-Q	001-36642	10.10	November 12, 2014
10.44	<u>Trademark License Agreement, dated as of September 30, 2014, by and between the Company and Vivint Solar Licensing, LLC</u>	10-Q	001-36642	10.11	November 12, 2014
10.45†	<u>Sales Dealer Agreement, dated as of August 16, 2017, by and between Vivint Solar Developer, LLC and Vivint, Inc.</u>	10-Q	001-36642	10.2	November 7, 2017
10.46	<u>Lease Agreement, dated as of August 12, 2014, by and between the Company and T-Stat One, LLC</u>	S-1/A	333-198372	10.48	September 18, 2014
10.47	<u>First Amendment to Lease, dated as of July 20, 2015, by and between the Company and T-Stat One, LLC</u>	10-K	001-36642	10.52	March 16, 2017
10.48	<u>Second Amendment to Lease, dated as of October 4, 2016, by and between the Company and T-Stat One, LLC</u>	10-K	001-36642	10.53	March 16, 2017
10.49*	<u>Third Amendment to Lease, dated as of February 22, 2019, by and between the Company and T-Stat One, LLC</u>				
10.50†	<u>Limited Liability Company Agreement of Vivint Solar Mia Project Company, LLC, dated as of July 16, 2013, by and between Vivint Solar Mia Manager, LLC and Blackstone Holdings Finance Co. L.L.C.</u>	S-1/A	333-198372	10.29	September 18, 2014

<u>Exhibit Number</u>	<u>Description</u>	<u>Form</u>	<u>File No.</u>	<u>Incorporated by Reference</u>	<u>Filing Date</u>
10.5 1 †	<u>First Amendment to the Limited Liability Company Agreement of Vivint Solar Mia Project Company, LLC, dated as of September 12, 2013, by and between Vivint Solar Mia Manager, LLC and Blackstone Holdings Finance Co. L.L.C.</u>	S-1/A	333-198372	10.29A	September 18, 2014
10.52	<u>Second Amendment to Limited Liability Company Agreement of Vivint Solar Mia Project Company, LLC, dated as of August 31, 2013, by and between Vivint Solar Mia Manager, LLC and Blackstone Holdings Finance Co. L.L.C.</u>	S-1	333-198372	10.29B	September 18, 2014
10.53†	<u>Third Amendment to Limited Liability Company Agreement of Vivint Solar Mia Project Company, LLC, dated as of April 15, 2015, by and between Vivint Solar Mia Manager, LLC and Blackstone Holdings I, L.P.</u>	10-Q	001-36642	10.2	May 14, 2015
10.54†	<u>Development, EPC and Purchase Agreement, dated as of July 16, 2013, by and among Vivint Solar Developer, LLC, Vivint Solar Holdings, Inc., and Vivint Solar Mia Project Company, LLC</u>	S-1/A	333-198372	10.30	September 18, 2014
10.55	<u>First Amendment to Development, EPC and Purchase Agreement, dated as of January 13, 2014, by and among Vivint Solar Developer, LLC, Vivint Solar Holdings, Inc., and Vivint Solar Mia Project Company, LLC</u>	S-1/A	333-198372	10.30A	September 18, 2014
10.56	<u>Second Amendment to Development, EPC and Purchase Agreement, dated as of April 25, 2014, by and among, Vivint Solar Developer, LLC, Vivint Solar Holdings, Inc., and Vivint Solar Mia Project Company, LLC</u>	S-1/A	333-198372	10.30B	September 18, 2014
10.57	<u>Third Amendment to Development, EPC and Purchase Agreement, dated as of April 15, 2015, by and between Vivint Solar Developer, LLC, Vivint Solar Holdings, Inc. and Vivint Solar Mia Project Company, LLC</u>	10-Q	001-36642	10.4	May 14, 2015
10.58	<u>Maintenance Services Agreement, dated as of July 16, 2013, by and between Vivint Solar Provider, LLC and Vivint Solar Mia Project Company, LLC</u>	S-1/A	333-198372	10.31	September 18, 2014
10.59	<u>First Amendment to Maintenance Services Agreement, dated as of April 15, 2015, by and between Vivint Solar Provider, LLC and Vivint Solar Mia Project Company, LLC</u>	10-Q	001-36642	10.3	May 14, 2015

<u>Exhibit Number</u>	<u>Description</u>	<u>Form</u>	<u>File No.</u>	<u>Incorporated by Reference</u>	<u>Filing Date</u>
10.60	<u>Guaranty, dated as of July 16, 2013, by the Company in favor of Blackstone Holdings Finance Co. L.L.C. and Vivint Solar Mia Project Company, LLC</u>	S-1	333-198372	10.32	September 18, 2014
10.61†	<u>Limited Liability Company Agreement of Vivint Solar Aaliyah Project Company, LLC, dated as of November 5, 2013, by and between Vivint Solar Aaliyah Manager, LLC and Stoneco IV Corporation</u>	S-1/A	333-198372	10.33	September 18, 2014
10.62†	<u>First Amendment to Limited Liability Company Agreement of Vivint Solar Aaliyah Project Company, LLC, dated as of January 13, 2014, by and between Vivint Solar Aaliyah Manager, LLC and Stoneco IV Corporation</u>	S-1/A	333-198372	10.33A	September 18, 2014
10.63	<u>Second Amendment to Limited Liability Company Agreement of Vivint Solar Aaliyah Project Company, LLC, dated as of April 15, 2015, by and between Vivint Solar Aaliyah Manager, LLC and Stoneco IV Corporation</u>	10-Q	001-36642	10.5	May 14, 2015
10.64†	<u>Development, EPC and Purchase Agreement, dated as of November 5, 2013, by and among Vivint Solar Developer, LLC, Vivint Solar Holdings, Inc., and Vivint Solar Aaliyah Project Company, LLC</u>	S-1/A	333-198372	10.34	September 18, 2014
10.65	<u>First Amendment to Development, EPC and Purchase Agreement, dated as of January 13, 2014, by and among, Vivint Solar Developer, LLC, Vivint Solar Holdings, Inc., and Vivint Solar Aaliyah Project Company, LLC</u>	S-1/A	333-198372	10.34A	September 18, 2014
10.66†	<u>Second Amendment to Development, EPC and Purchase Agreement, dated as of February 13, 2014, by and among Vivint Solar Developer, LLC, Vivint Solar Holdings, Inc., and Vivint Solar Aaliyah Project Company, LLC</u>	S-1/A	333-198372	10.34B	September 18, 2014
10.67	<u>Third Amendment to Development, EPC and Purchase Agreement, dated as of April 15, 2015, by and between Vivint Solar Developer, LLC, Vivint Solar Holdings, Inc. and Vivint Solar Aaliyah Project Company, LLC</u>	10-Q	001-36642	10.7	May 14, 2015
10.68	<u>Maintenance Services Agreement, dated as of November 5, 2013, by and between Vivint Solar Provider, LLC and Vivint Solar Aaliyah Project Company, LLC</u>	S-1/A	333-198372	10.35	September 18, 2014

<u>Exhibit Number</u>	<u>Description</u>	<u>Form</u>	<u>File No.</u>	<u>Incorporated by Reference</u>	<u>Filing Date</u>
10.69	First Amendment to Maintenance Services Agreement, dated as of April 15, 2015, by and between Vivint Solar Provider, LLC and Vivint Solar Aaliyah Project Company, LLC	10-Q	001-36642	10.6	May 14, 2015
10.70	Guaranty, dated as of November 5, 2013, by the Company in favor of Stoneco IV Corporation, LLC and Vivint Solar Aaliyah Project Company, LLC	S-1	333-198372	10.36	September 18, 2014
10.71†	Limited Liability Company Agreement of Vivint Solar Rebecca Project Company, LLC, dated as of February 13, 2014, by and between Vivint Solar Rebecca Manager, LLC and Blackstone Holdings I L.P.	S-1/A	333-198372	10.37	September 18, 2014
10.72	First Amendment to Limited Liability Company Agreement of Vivint Solar Rebecca Project Company, LLC, dated as of April 15, 2015, by and between Vivint Solar Rebecca Manager, LLC and Blackstone Holdings I, L.P.	10-Q	001-36642	10.8	May 14, 2015
10.73†	Development, EPC and Purchase Agreement, dated as of February 13, 2014, by and among Vivint Solar Developer, LLC, Vivint Solar Holdings, Inc. and Vivint Solar Rebecca Project Company, LLC	S-1/A	333-198372	10.38	September 18, 2014
10.74	First Amendment to Development, EPC and Purchase Agreement, dated as of April 15, 2015, by and between Vivint Solar Developer, LLC, Vivint Solar Holdings, Inc. and Vivint Solar Rebecca Project Company, LLC	10-Q	001-36642	10.10	May 14, 2015
10.75	Maintenance Services Agreement, dated as of February 13, 2014, by and between Vivint Solar Provider, LLC and Vivint Solar Rebecca Project Company, LLC	S-1/A	333-198372	10.39	September 18, 2014
10.76	First Amendment to Maintenance Services Agreement, dated as of April 15, 2015, by and between Vivint Solar Provider, LLC and Vivint Solar Rebecca Project Company, LLC	10-Q	001-36642	10.9	May 14, 2015
10.77	Guaranty, dated as of February 13, 2014, by the Company in favor of Blackstone Holdings I L.P. and Vivint Solar Rebecca Project Company, LLC	S-1	333-198372	10.40	September 18, 2014
10.78	Subscription Agreement, dated as of August 14, 2014, by and between the Company and 313 Acquisition LLC	S-1	333-198372	10.41	August 26, 2014

<u>Exhibit Number</u>	<u>Description</u>	<u>Form</u>	<u>File No.</u>	<u>Incorporated by Reference</u>	<u>Filing Date</u>
10.79	Subscription Agreement, dated as of September 3, 2014, by and between the Company and the investors named therein	S-1/A	333-198372	10.43	September 18, 2014
21.1*	List of subsidiaries of the Company				
23.1*	Consent of Ernst & Young LLP				
31.1*	Certification of Principal Executive Officer Pursuant to Rules 13a-14(a) and 15d-14(a) under the Securities Exchange Act of 1934, as Adopted Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002				
31.2*	Certification of Principal Financial Officer Pursuant to Rules 13a-14(a) and 15d-14(a) under the Securities Exchange Act of 1934, as Adopted Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002				
32.1*	Certification of Principal Executive Officer Pursuant to 18 U.S.C. Section 1350, as Adopted Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002				
32.2*	Certification of Principal Financial Officer Pursuant to 18 U.S.C. Section 1350, as Adopted Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002				
101.INS*	XBRL Instance Document				
101.SCH*	XBRL Taxonomy Extension Schema Document				
101.CAL*	XBRL Taxonomy Extension Calculation Linkbase Document				
101.DEF*	XBRL Taxonomy Extension Definition Linkbase Document				
101.LAB*	XBRL Taxonomy Extension Label Linkbase Document				
101.PRE*	XBRL Taxonomy Extension Presentation Linkbase Document				

Legend:

- + Indicates a management contract or compensatory plan.
- † Confidential treatment has been requested with respect to certain portions of this exhibit. Omitted portions have been filed separately with the Securities and Exchange Commission.
- * Filed herewith. The Certifications attached as Exhibits 32.1 and 32.2 that accompany this Annual Report on Form 10-K are not deemed filed with the Securities and Exchange Commission and are not to be incorporated by reference into any filing of the Company under the Securities Act of 1933, as amended, or the Securities Exchange Act of 1934, as amended, whether made before or after the date of this Form 10-K, irrespective of any general incorporation language contained in such filing.

SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, as amended, the Registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized .

Vivint Solar, Inc.

Date: March 5, 2019

By: /s/ David Bywater

David Bywater
Chief Executive Officer

Pursuant to the requirements of the Securities Exchange Act of 1934, as amended, this report has been signed below by the following persons on behalf of the Registrant in the capacities and on the dates indicated.

<u>Name</u>	<u>Title</u>	<u>Date</u>
<u>/s/ David Bywater</u> David Bywater	Chief Executive Officer, Director (Principal Executive Officer)	March 5, 2019
<u>/s/ Dana Russell</u> Dana Russell	Chief Financial Officer and Executive Vice President (Principal Accounting and Financial Officer)	March 5, 2019
<u>/s/ David F. D'Alessandro</u> David F. D'Alessandro	Director	March 5, 2019
<u>/s/ Alex J. Dunn</u> Alex J. Dunn	Director	March 5, 2019
<u>/s/ Bruce McEvoy</u> Bruce McEvoy	Director	March 5, 2019
<u>/s/ Jay D. Pauley</u> Jay D. Pauley	Director	March 5, 2019
<u>/s/ Todd R. Pedersen</u> Todd R. Pedersen	Director	March 5, 2019
<u>/s/ Joseph S. Tibbetts, Jr.</u> Joseph S. Tibbetts, Jr.	Director	March 5, 2019
<u>/s/ Peter F. Wallace</u> Peter F. Wallace	Director	March 5, 2019

EXECUTIVE EMPLOYMENT AGREEMENT

THIS EXECUTIVE EMPLOYMENT AGREEMENT (“*Agreement*”) dated as of January 1, 2019 (the “*Effective Date*”), is made by and between Vivint Solar, Inc., a Delaware corporation (together with any successor thereto, the “*Company*”) and Thomas Plagemann (the “*Executive*”).

WHEREAS, the Company and the Executive have entered into an Employment Agreement, dated September 25, 2013 (as amended on September 1, 2016, the “*Prior Employment Agreement*”) and the Executive has been and is currently employed by the Company;

WHEREAS, the Company desires to continue to employ the Executive, and the Executive desires to be employed by the Company, on the terms herein provided; and

WHEREAS, the Company and the Executive desire to terminate the Prior Employment Agreement and replace and supersede the Prior Employment Agreement in its entirety with this Agreement;

NOW, THEREFORE, in consideration of the foregoing and of the respective covenants and agreements set forth below the parties hereto agree as follows:

1. Certain Definitions.

(a) “*Board*” shall mean the Board of Directors of the Company.

(b) “*Cause*” for the Company to terminate the Executive’s employment hereunder shall exist upon the occurrence of any of the following during Executive’s employment by the Company (except with respect to clause (v) below): (i) material personal dishonesty by Executive involving Company business or participation in a fraud against the Company, or Executive’s breach of Executive’s fiduciary duty to Company; (ii) Executive’s indictment or conviction of a felony or other crime involving moral turpitude or dishonesty; (iii) Executive’s willful material refusal to comply with the lawful requests made of Executive by the Board reasonably related to Executive’s employment by the Company and the performance of Executive’s duties with respect thereto (but which shall not include a request to waive or amend any portion of this Agreement or terminate this Agreement or to consent to an action that would result in Executive’s loss of a right under this Agreement); (iv) Executive’s material violation of the Company’s policies, after written notice to Executive and an opportunity to be heard by the Board and Executive’s failure to fully cure such violations within a reasonable period of time of not less than thirty (30) days after such hearing; (v) Executive’s threats or acts of violence in the workplace; (vi) Executive’s unlawful harassment in the course of any business activity of any employee or independent contractor of the Company; (vii) Executive’s theft or unauthorized conversion by or transfer of any Company asset or business opportunity to Executive or any third party; and (viii) a material breach by Executive of any material provision of this Agreement or any other agreement with the Company after written notice to Executive and an opportunity to be heard by the Board and Executive’s failure to fully cure such breach within a reasonable period of time of not less than 30 days after such hearing.

(c) “*Change in Control*” shall mean the occurrence of any of the following:

(i) *Change in Ownership of the Company*. A change in the ownership of the Company which occurs on the date that any one person, or more than one person acting as a group (“*Person*”), acquires ownership of the stock of the Company that, together with the stock held by such Person, constitutes more than 50% of the total voting power of the stock of the Company; or

(ii) *Change in Effective Control of the Company* . A change in the effective control of the Company which occurs on the date that a majority of members of the Board is replaced during any 12-month period by directors whose appointment or election is not endorsed by a majority of the members of the Board prior to the date of the appointment or election. For purposes of this clause (ii), if any Person is considered to be in effective control of the Company, the acquisition of additional control of the Company by the same Person shall not be considered a Change of Control; or

(iii) *Change in Ownership of a Substantial Portion of the Company's Assets* . A change in the ownership of a substantial portion of the Company's assets which occurs on the date that any Person acquires (or has acquired during the 12-month period ending on the date of the most recent acquisition by such person or persons) assets from the Company that have a total gross fair market value equal to or more than 50% of the total gross fair market value of all of the assets of the Company immediately prior to such acquisition or acquisitions; provided, however, that for purposes of this subsection (iii), the following will not constitute a change in the ownership of a substantial portion of the Company's assets: (A) a transfer to an entity that is controlled by the Company's stockholders immediately after the transfer, or (B) a transfer of assets by the Company to: (1) a stockholder of the Company (immediately before the asset transfer) in exchange for or with respect to the Company's stock, (2) an entity, 50% or more of the total value or voting power of which is owned, directly or indirectly, by the Company, (3) a Person, that owns, directly or indirectly, 50% or more of the total value or voting power of all the outstanding stock of the Company, or (4) an entity, at least 50% of the total value or voting power of which is owned, directly or indirectly, by a Person described in this subsection (iii)(B)(3). For purposes of this subsection (iii), gross fair market value means the value of the assets of the Company, or the value of the assets being disposed of, determined without regard to any liabilities associated with such assets. For purposes of this subsection (iii), gross fair market value means the value of the assets of the Company, or the value of the assets being disposed of, determined without regard to any liabilities associated with such assets.

For these purposes, persons shall be considered to be acting as a group if they are owners of a corporation that enters into a merger, consolidation, purchase or acquisition of stock, or similar business transaction with the Company.

Notwithstanding the foregoing provisions of this definition, a transaction will not constitute a Change of Control unless the transaction qualifies as a change in control event within the meaning of Section 409A.

Further and for the avoidance of doubt, a transaction will not constitute a Change of Control if: (i) its sole purpose is to change the state of the Company's incorporation, or (ii) its sole purpose is to create a holding company that will be owned in substantially the same proportions by the persons who held the Company's securities immediately before such transaction.

(d) “ **Change of Control Period** ” means the period beginning on the date six months prior to, and ending on the date that is 18 months following, a Change of Control.

(e) “ **Compensation Committee** ” means the compensation committee of the Board.

(f) “ **Confidential Information** ” means any present or future information belonging to the Company or its Affiliates (as defined below) that pertains to the Company's or its Affiliates' business, whether developed by Employee or by other employees, contractors, or agents, that is confidential or

proprietary in nature, and that is not generally known in the public domain. Confidential Information includes, without limitation, information regarding the Company's finances, financial condition, operations, business plans, business opportunities, purchasing activities, suppliers or potential suppliers, costs of materials, pricing, margins, sales, markets, marketing strategies, plans and ideas, customers, customer lists, customer agreements, customer purchases, customer documents, potential customers, technical data, research, product plans, products, methodologies, services, software, developments, inventions, processes, formulas, technology, designs, drawings, engineering, hardware configuration information, trade secrets, Confidential Materials, Inventions, Employment Inventions, Intellectual Property, or any other confidential business information of the Company that is disclosed to or obtained by Employee, directly or indirectly, whether in writing, orally, by observation or electronically (through email, computer disk, DVD, CD-ROM, or other electronic means). For these purposes, "Affiliate(s)" means any corporation, firm, partnership or other entity that controls, is controlled by or is under common control with Company – including, but not limited to, Vivint Solar Developer, LLC and any of Company's subsidiaries.

(g) "**Confidential Materials**" means any tangible medium containing Confidential Information, including but not limited to paper, electronic or magnetic media, prototypes, products, and other materials.

(h) "**Customer**" means any individual or entity that (1) entered into a credit authorization agreement with the Company during the six months immediately preceding the date Employee left his or her employment with the Company or its Subsidiaries or (2) entered into a contractual agreement with the Company to purchase or lease any product or service offered by the Company or its Subsidiaries.

(i) "**Date of Termination**" shall mean if the Executive's employment is terminated.

(j) "**Disability**" shall mean that Executive has been unable to perform Executive's duties at the Company as the result of Executive's incapacity due to physical or mental illness, and such inability, at least 26 weeks after its commencement, is determined to be total and permanent by a physician selected by the Company or its insurers and acceptable to Executive or Executive's legal representative (such Agreement as to acceptability not to be unreasonably withheld). Termination resulting from Disability may only be effected after at least 30 days' written notice by the Company of its intention to terminate Executive's employment. In the event that Executive resumes the performance of substantially all of Executive's duties hereunder before the termination of Executive's employment becomes effective, the notice of intent to terminate shall automatically be deemed to have been revoked.

(k) "**Employment Inventions**" means any Invention or part thereof conceived, developed, reduced to practice, or created by Employee which is:

- (i) conceived, developed, reduced to practice, or created by the Employee: (1) within the scope of the Employee's employment with the Company; (2) on the Company's time; or (3) with the aid, assistance, or use of any of the Company's property, equipment, facilities, supplies, resources, or Intellectual Property;
- (ii) the result of any work, services, or duties performed by the Employee for the Company;
- (iii) related to the industry or trade of the Company; or
- (iv) related to the current or demonstrably anticipated business, research, or development of the Company.

(l) “ **Good Reason** ” means Executive’ s resignation within 90 days following the expiration of any Company cure period (discussed below) following the occurrence of one or more of the following, without Executive’s express written consent:

- (i) a material diminution in Executive’s title, duties, authority, reporting position or responsibilities measured in the aggregate; or
- (ii) a material reduction of Executive’s base compensation (in other words, a material reduction in Executive’s base salary or target bonus opportunity) as in effect immediately prior to such reduction, other than reductions implemented as part of an overall Company-wide reduction program that is applied similarly to all executive officers and is no more than 20%; or
- (iii) a change in the geographic location at which Executive must perform services outside of New York City, New York; or
- (iv) a material breach by the Company of a material provision of any material agreement between Executive and the Company.

Notwithstanding the foregoing, Executive agrees not to resign for Good Reason without first providing the Company with written notice of the acts or omissions constituting the grounds for Good Reason within ninety 90 days of the initial existence of the grounds for Good Reason and a reasonable cure period of thirty 30 days following the date of such notice.

(m) “ **Intellectual Property** ” means any and all patents, copyrights, trademarks, service marks, trade secrets, know how, technology, ideas, or computer software belonging to the Company or its affiliates.

(n) “ **Inventions** ” means any and all inventions, products, formulations, discoveries, ideas, developments, improvements, technology, know-how, products, devices, structures, equipment, processes, methods, techniques, formulas, trade secrets, texts, research, program, software, computer programs, source codes, data, designs, works of authorship, and or other materials, whether or not published, patented, copyrighted, registered or suitable therefor, and all intellectual property rights therein, to the extent they relate to the Company’s past, present, future, or anticipated business, research, development or trade.

(o) “ **Material Contact** ” means personal contact or the supervision of the efforts of those who have direct personal contact.

(p) “ **Pre-Existing Inventions** ” means any and all inventions, discoveries, ideas, original works of authorship, developments, improvements, trade secrets and other proprietary information or intellectual property rights owned by Employee or in which Employee has an interest prior to, or separate from, Employee’s employment with the Company, including, without limitation, any such inventions that qualifies fully under the provisions of California Labor Code Section 2870, Del.Code tit. 19, § 805, N.C.Gen.Stat. §§ 66-57.1, and Utah Code § 34-39-3(1).

(q) “ **Restricted Business** ” means any individual or entity that provides products and/or services that are competitive with those offered or provided by the Company or any of its subsidiaries at any time during the Restricted Period, including (without limitation) the following companies: Renovate America, Solar Mosaic, Spruce Finance, Sungevity, Sunrun, SolarCity, SunPower Corporation, Sunova Energy Corp., ION Solar, Trinity Solar, Tesla, NRG Energy, Legacy, Verengo, RGS Energy, OneRoof Energy, Borrego Solar, groSolar, Smart Energy, Legend Solar, and any of their respective affiliates or

current or future dealers.

(r) “ **Restricted Period** ” means a period of 12 months following the date of Executive’s termination of employment; provided, however, that if Executive’s termination of employment occurs under the circumstances giving rise to payment under Section 5(b) of this Agreement, the Restricted Period will equal the Non-COC Severance Period.

(s) “ **Restricted Territory** ” means any geographic area that is within 100 miles of any geographic area in which the Company or any of its Subsidiaries engaged in business during the two years immediately preceding the date Executive left his employment with the Company or any of its Subsidiaries.

(t) “ **Restricted Stock Unit** ” shall have the meaning set forth in the Vivint Solar Inc. 2014 Equity Incentive Award Plan.

2. **At-Will Employment.**

The Company and Executive acknowledge that Executive’s employment will continue to be at-will, as defined under applicable law.

3. **Position and Duties.**

(a) Generally. The Executive shall serve as the Chief Commercial Officer, an Executive Vice President, and the Head of Capital Markets of the Company. Subject to reasonable modification from time to time by the Board, Executive shall report to the Company’s Chief Executive Officer and shall serve as CCO, EVP, and Head of Capital Markets of the Company with such customary responsibilities, duties and authority as are usually incident to the position of CCO, EVP, and Head of Capital Markets. Executive shall be responsible for such duties normally associated with such position and as may be directed by the Board. Executive will, on a full-time basis, apply all of her skill and experience to the performance of her duties in such employment and will not, without the prior consent of the Board, devote substantial amounts of time to outside business activities. Notwithstanding the foregoing, Executive may devote a reasonable amount of her time to civic, community, charitable or passive investment activities.

(b) Subsidiaries. If elected or appointed thereto, and only for the duration of such elected term or appointment, the Executive shall serve as a director of the Company and any of its subsidiaries and/or in one or more executive offices of any of such subsidiaries, provided that the Executive is indemnified for serving in any and all such capacities as provided for in the Company By-laws or otherwise.

4. **Compensation and Related Matters.**

(a) Annual Base Salary. During Executive’s employment, Executive shall receive a base salary (such base salary, as in effect from time to time, the “ **Annual Base Salary** ”) at a rate of \$500,000 per annum, provided that the Executive’s Annual Base Salary may be revised as determined by the Board or its authorized committee with a view toward consideration of merit increases, market rates of pay for similarly situated executives and such other factors that the Board or its authorized committee determines to be appropriate. The Annual Base Salary shall be paid in arrears in substantially equal installments at monthly or more frequent intervals, in accordance with the normal payroll practices of the Company.

(b) Bonus. Executive shall be eligible to receive an annual performance bonus with a target

amount of 100% of the Annual Base Salary (the “**Annual Bonus**”). The Annual Bonus will be determined by the Compensation Committee of the Board and based on criteria as set forth in the “Performance Incentive Plan” dated January 1, 2012, or any successor Performance Incentive Plan approved by the Compensation Committee, such Annual Bonus to be established by the Compensation Committee in its sole discretion. The Annual Bonus shall be paid in no event later than March 15th of the calendar year following the calendar year in which such bonus is earned.

(c) Benefits. Executive shall be entitled to participate in the other employee benefit plans, programs and arrangements of the Company in effect during Executive’s employment (including, without limitation, at the time of execution of this Agreement, health insurance, dental insurance, vision insurance, long-term disability coverage, short term disability, cellular phone reimbursement, and vacation for Executive and his/her eligible dependents) now (or, to the extent determined by the Compensation Committee, hereafter) in effect which are applicable to the senior officers of the Company (the “Eligible Benefit Plans”), subject to and on a basis consistent with the terms, conditions and overall administration thereof. The Executive agrees that nothing contained in this Agreement shall prevent the Company from terminating or modifying any such Eligible Benefit Plans in whole or in part at any time.

(d) Expenses. The Company shall reimburse the Executive for all reasonable travel and other business expenses incurred by her in the performance of her duties to the Company, in accordance with the Company’s documentation and other policies with respect thereto.

5. **Severance Benefits.**

(a) Voluntary Resignation; Termination for Cause. If Executive’s employment with the Company terminates (i) voluntarily by Executive other than for Good Reason during the Change of Control Period, or (ii) for Cause by the Company, then Executive shall not be entitled to receive any payment other than accrued but unpaid vacation, expense reimbursements, wages, and other benefits due to Executive under any Company’s established employee plans, policies, and arrangements that provide benefits other than in the nature of severance or separation pay (“**Accrued Compensation**”).

(b) Involuntary Termination other than for Cause outside of the Change of Control Period. If, outside of the Change of Control Period, the Company terminates Executive’s employment with the Company other than for Cause (excluding by reason of death or Disability), then subject to Section 6 below and in addition to any Accrued Compensation, Executive shall receive the following:

(i) Non-COC Severance Payment. Executive shall be paid an amount equal to 1.0x the sum of (A) Executive’s base salary rate, as then in effect, plus (B) the average of performance bonuses paid to Executive for each year Executive was employed by the Company during the 3-year period immediately preceding the date of Executive’s termination of employment (the “**Non-COC Severance**”). The Non-COC Severance will be paid, less applicable withholdings, in equal installments over a period of 12 months following the date Executive’s employment with the Company terminates (the “**Non-COC Severance Period**”), with the first payment to be made on the 61st day following Executive’s termination of employment (and to include any severance payments that otherwise would have been paid to Executive within the 60 days following the date of Executive’s termination of employment), with any remaining payments paid in accordance with the Company’s normal payroll practices for the remainder of the Non-COC Severance Period.

(ii) Non-COC Additional Bonus Payment. Executive shall be paid an amount equal to a pro-rata portion of the annual bonus paid to Executive in respect of the fiscal year which ended prior to the fiscal year that contained the date of Executive’s termination of employment; provided, however, that if the duration of Executive’s employment with the Company in the prior fiscal year did not entitle

Executive to annual bonus for that fiscal year, such pro-rata portion instead will be determined using Executive's target annual bonus in the fiscal year that contained the date of Executive's termination of employment (the "**NonCOC Additional Bonus**"). The pro-rata portion will be based on the number of days that elapsed in the fiscal year between the first day of the fiscal year and the date of Executive's termination of employment compared to 365. This Non-COC Additional Bonus will be paid, less applicable withholdings, in equal installments over the Non-COC Severance Period, with the first payment to be made on the 61st day following Executive's termination of employment (and to include any Non-COC Additional Bonus amount that otherwise would have been paid to Executive within the 60 days following the date of Executive's termination of employment), with any remaining payments paid in accordance with the Company's normal payroll practices for the remainder of the Non-COC Severance Period.

(iii) Continued Employee Benefits. If Executive elects continuation coverage pursuant to the Consolidated Omnibus Budget Reconciliation Act of 1985, as amended ("**COBRA**") within the time period prescribed pursuant to COBRA for Executive and Executive's eligible dependents, then the Company will reimburse Executive for the COBRA premiums for such coverage (at the coverage levels in effect immediately prior to Executive's termination) until the earlier of (A) the end of the Non-COC Severance Period or (B) the date upon which Executive and/or Executive's eligible dependents are no longer eligible for COBRA continuation coverage. The reimbursements will be made by the Company to Executive consistent with the Company's normal expense reimbursement policy. Notwithstanding the first sentence of this Section 5(b)(iii), if, at the time of Executive's termination of employment, it would result in a Company excise tax to reimburse Executive for the COBRA premiums than no such premiums will be reimbursed and if do so would not cause imposition of an excise tax, Executive will be paid a single lump sum of \$12,000.

(c) Involuntary Termination other than for Cause or Voluntary Termination for Good Reason within the Change of Control Period. If, within the Change of Control Period, (i) the Company terminates Executive's employment without Cause (excluding by reason of death or Disability) or (ii) Executive terminates Executive's employment with the Company for Good Reason, then, subject to Section 6 below and in addition to any Accrued Compensation, Executive shall receive the following severance from the Company:

(i) COC Severance Payment. Executive shall be paid an amount equal to 1.5x the sum of (A) Executive's base salary rate, as then in effect, plus (B) the average of the performance bonuses paid to Executive for each year Executive was employed by the Company during the 3-year period immediately preceding the date of Executive's termination of employment (the "**COC Severance**"). The COC Severance will be paid, less applicable withholdings, in a lump sum on the 61st day following Executive's termination of employment. For the avoidance of doubt, if (x) Executive incurred a termination prior to a Change of Control that qualifies Executive for severance payments under Section 5(b)(i) above; and (y) a Change of Control occurs within six months following Executive's termination of employment that qualifies Executive for the superior benefits under this Section 5(c)(i), then Executive shall be entitled to a lump-sum payment of the amount calculated under this Section 5(c)(i), less amounts already paid under Section 5(b)(i) above.

(ii) COC Additional Bonus Payment. Executive shall be paid an amount equal to a pro-rata portion of the annual performance bonus that would have been paid to Executive had Executive been employed by the Company for the entire fiscal year that contained the date of Executive's termination of employment, based on actual performance for such fiscal year (and assuming that any performance objectives that are based on individual performance are achieved at target levels) (the "**COC Additional Bonus**"). This COC Bonus Severance will be paid in a lump sum, less applicable withholdings, at the same time the COC Severance. For the avoidance of doubt, if (x) Executive incurred

a termination prior to a Change of Control that qualifies Executive for severance payments under Section 5 (a)(ii) above; and (y) a Change of Control occurs within six months following Executive's termination of employment that qualifies Executive for superior benefits under this Section 5 (c)(ii), then Executive shall be entitled to a lump-sum payment of the amount calculated under this Section 5 (c)(ii), less amounts already paid under Section 5 (b)(ii) above, but in no case less than \$0.

(iii) Equity Compensation Acceleration. 100% of Executive's then unvested outstanding stock options, restricted stock units and other Company equity compensation awards, including any equity awards transferred to Executive's estate planning vehicles (the "**Equity Compensation Awards**") shall immediately vest and become exercisable. In the case of equity awards with performance-based vesting, all performance goals or other vesting criteria will be deemed achieved at target levels. Any Company stock options and stock appreciation rights shall thereafter remain exercisable following Executive's employment termination for the period prescribed in the respective option and stock appreciation right agreements.

(iv) Continued Employee Benefits. If Executive elects continuation coverage pursuant to the COBRA within the time period prescribed pursuant to COBRA for Executive and Executive's eligible dependents, then the Company will reimburse Executive for the COBRA premiums for such coverage (at the coverage levels in effect immediately prior to Executive's termination) until the earlier of (A) the end of 12 months or (B) the date upon which Executive and/or Executive's eligible dependents are no longer eligible for COBRA continuation coverage. The reimbursements will be made by the Company to Executive consistent with the Company's normal expense reimbursement policy. Notwithstanding the first sentence of this Section 5(c)(iv), if, at the time of Executive's termination of employment, it would result in a Company excise tax to reimburse Executive for the COBRA premiums than no such premiums will be reimbursed and if do so would not cause imposition of an excise tax, Executive will be paid a single lump sum of \$24,000.

(d) Termination for Death or Disability. If Executive's employment is terminated as a result of Executive's Disability or death, Executive (or Executive's estate) shall not be entitled to receive any payment other than (i) Accrued Compensation and (ii) in the case of Executive's Disability only, the benefits set forth in Section 5(b)(iii).

(e) Exclusive Remedy. In the event of a termination of Executive's employment, the provisions of Section 5 are intended to be and are exclusive in lieu of any other rights or remedies to which Executive or the Company otherwise may be entitled, whether at law, tort, or contract, in equity, or under this Agreement (other than the payment of Accrued Compensation). For the avoidance of doubt, Executive shall in no circumstances be entitled to both benefits pursuant to Section 5(b) and the benefits pursuant to Section 5(c), except as specifically set out in Section 5(c). Executive will be entitled to no benefits, compensation, or other payments or rights upon a termination of employment other than those benefits expressly set forth in Section 5 of this Agreement.

6. Conditional Nature of Severance Payments and Benefits.

(a) Release of Claims Agreement. Notwithstanding anything to the contrary in this Agreement, the Executive shall not be entitled to any severance payments or benefits under Section 5, unless the Executive executes and does not revoke the release of claims in substantially the form attached hereto as Exhibit A (the "**Release**"), and such release becomes effective and irrevocable within sixty (60) days following the Date of Termination (the "**Release Deadline**"). If the Release does not become effective and irrevocable by the Release Deadline, Executive shall forfeit any right to severance payments or benefits under this Agreement. In no event shall severance payments or benefits be paid or provided until the Release actually becomes effective and irrevocable. Notwithstanding anything to the contrary in

Section 5, the payments due under Section 5 shall be payable commencing on the Company's first payroll date occurring on or after the 60th day following the Date of Termination, or if later, such time as required by Sections 22 and 23 below (the "**First Payroll Date**"), and any amounts that would otherwise have been paid pursuant to such Section 5 prior to the First Payroll Date shall be paid in a lump-sum on the First Payroll Date.

(b) Restrictive Covenants. During the term of Executive's employment and for the Restricted Period, Executive shall comply with the restrictive covenants set forth in Section 7 (collectively, the "**Restrictive Covenants**"). Executive's receipt of any payments or benefits under Section 5 shall be subject to Executive continuing to comply with the terms of the Restrictive Covenants.

7. **Restrictive Covenants.**

(a) Covenant Not to Solicit Employees. To the fullest extent permitted under applicable law, Executive agrees that during the Restricted Period, Executive will not directly or indirectly engage in the following conduct, nor will Executive aid, abet, assist, encourage, or influence others to do so: Induce or attempt to induce, solicit or attempt to solicit, or encourage or attempt to encourage, in any capacity, on Executive's behalf or on behalf of any other firm, person or entity, any employee of the Company with whom you had Material Contact while employed by the Company, to terminate their employment relationship with the Company to work in or for a Restricted Business. Executive agrees that nothing in this Section shall affect his/her continuing obligations under this Agreement during and after the Restricted Period, including, without limitation, Executive's obligations under the Confidentiality and Non-Disclosure Agreement section in this Agreement.

(b) Covenant Not to Solicit Customers. During the Restricted Period, Executive will not directly or indirectly engage in the following conduct, nor will Executive aid, abet, assist, encourage, or influence others to do so: Induce or attempt to induce, solicit or attempt to solicit, or encourage or attempt to encourage, in any capacity, on Executive's behalf or on behalf of any other firm, person, or entity, any Customer with whom you had Material Contact during the last six (6) months of your employment with the Company to terminate a contract with the Company or to enter into a contract with another company. Executive acknowledges and agrees that (i) the names, addresses, product specifications, pricing, and information regarding Customers and the Company, are the confidential and proprietary information of the Company (collectively, "**Proprietary Information**"); and (ii) Executive shall not, nor shall it permit any other person or entity within its control, to sell, disclose, or otherwise disseminate Proprietary Information (each, "**Improper Disclosure**"). Executive promises not to engage in any Improper Disclosure during or after his/her employment with the Company.

(c) Covenant Not to Compete. To the maximum extent permitted under applicable law, during the Restricted Period, Executive shall not, in any manner, directly or indirectly, in the Restricted Territory perform the same or substantially similar job duties that you performed for the Company on behalf of any business, person, firm, corporation, partnership, limited liability company, governmental or private entity, or any other entity of whatever kind, engaged in the Restricted Business.

Nothing contained in this Agreement shall prohibit Executive from being a passive owner of not more than two percent (2%) of the outstanding stock of any class of a corporation, any securities of which are publicly traded, so long as Executive has no active participation in the business of such corporation.

During the Restricted Period, Executive shall communicate the contents of this Agreement to any person (including any business) that Executive intends to be retained or employed by, associated with, or represent and which Executive knows is engaged in the Restricted Business in the Restricted Territory.

(d) Tolling of Covenants. If a court of competent jurisdiction determines that Executive has violated any of Executive's obligations under this Agreement, then the Restricted Period will automatically be extended by a period of time equal in length to the period during which such violation or violations occurred.

(e) Reasonableness of Covenants. Executive acknowledges and understands that the covenants of Executive under this Agreement are limited to the extent necessary to protect the legitimate business interests of the company, including the loss of goodwill, unfair competition and to preserve the Company's Confidential Information. Executive expressly acknowledges and agrees that the respective covenants and agreements contained herein are reasonable as to both scope and time.

EXECUTIVE ACKNOWLEDGES AND UNDERSTANDS THAT HIS OR HER STRICT COMPLIANCE WITH THE COVENANTS HEREUNDER IS A MATERIAL CONDITION OF THIS AGREEMENT, AND THAT THE COMPANY WOULD NOT HAVE ENGAGED, OR CONTINUED TO ENGAGE, EXECUTIVE WITHOUT THIS AGREEMENT.

(f) Construction of this Section. In the event the terms of this Section 7 shall be determined by any court of competent jurisdiction to be unenforceable by reason of its extending for too great a period of time or over too great a geographical area or by reason of its being too extensive in any other respect, it will be interpreted to extend only over the maximum period of time for which it may be enforceable, and/or over the maximum geographical area as to which it may be enforceable and/or to the maximum extent in all other respects as to which it may be enforceable, all as determined by such court in such action.

8. Confidentiality and Non-Disclosure Agreement.

(a) Covenant to Safeguard Confidential Information. In connection with Executive's Services hereunder, Executive may receive or have access to Confidential Information and Confidential Materials. Executive acknowledges and agrees that:

(i) All Confidential Information shall remain the sole property of the Company;

(ii) All Confidential Information belonging to the Company is valuable, special and unique to the Company's business, that the Company's business depends upon such Confidential Information, and that the Company wishes to protect such Confidential Information by keeping it confidential for the use and benefit of the Company;

(iii) Unless Executive is engaging in Protected Activity, as described below in Section 8(e), Executive shall keep all Confidential Information confidential and will not, without the prior written consent of the Company's Chief Executive Officer or General Counsel, disclose (whether directly or through some other person or entity), in whole or in part, and will not use such information, directly or indirectly, for any purpose other than as expressly allowed by the Company;

(iv) Unless Executive is engaging in Protected Activity, as described below in Section 8(e), Executive shall not use the Company's Confidential Information for Executive's direct or indirect benefit or for the direct or indirect benefit of any person or entity other than the Company;

(v) Unless Executive is engaging in Protected Activity, as described below in Section 8(e), Executive shall not aid, encourage, or allow any other person or entity to use the Company's Confidential Information without authorization;

(vi) Executive shall use reasonable and diligent efforts to protect the confidentiality of the Company's Confidential Information;

(vii) Unless Executive is engaging in Protected Activity, as described below in Section 8(e), Executive shall use the Company's Confidential Information solely to fulfill the duties of Executive's employment relationship with the Company and not otherwise to use such information for Executive's benefit or the benefit of others;

(viii) Executive shall not use, view, or access Confidential Information where it can be seen or viewed by unauthorized persons, and not to leave such information or materials where they can be seen or accessed by unauthorized persons;

(ix) Executive shall notify the Company if Executive becomes aware of any loss, misuse, wrongful disclosure, or other unauthorized access of the Company's Confidential Information by any person;

(x) Executive shall take all other reasonable steps necessary, or reasonably requested by the Company, to safeguard the Company's Confidential Information from unauthorized disclosure or use; and

(xi) Executive shall not disclose to the Company any trade secrets or confidential information of party to whom Executive owes a duty of confidentiality.

(b) Permission to Notify. Executive authorizes the Company to notify others, including (without limitation) the Executive's current or future clients, of the terms of this Agreement and the Executive's covenants and obligations hereunder.

(c) Return of Information. Upon the request of the Company, or upon the termination of Executive's employment with the Company, Executive shall deliver promptly (and in no event later than two (2) business days after termination) to the Company all Confidential Information and other documents or materials belonging to the Company (including all copies thereof), and all other property belonging to the Company, which are in Executive's possession, custody or control.

(d) Notice of Compelled Disclosure. In the event that Executive or anyone to whom Executive transmits any Confidential Information (" **Compelled Person** ") becomes legally compelled (by oral questions, interrogatories, requests for information or documents, subpoena, civil investigative demand, or other similar judicial or other compulsory process) to disclose any of the Confidential Information, such Compelled Person will provide the Company with prompt written notice so that it may seek a protective order or other appropriate remedy to protect and preserve the confidentiality of such Confidential Information and/or waive compliance with the provisions of this Agreement. In the event that such a protective order or other remedy is not obtained, or compliance with the provisions of this Agreement is waived, Executive shall disclose or furnish only that portion of the Confidential Information that Executive is legally required to produce and will exercise his or her best efforts to obtain reliable assurance that the Confidential Information will be kept confidential to the greatest extent possible. This provision shall not restrict an Executive who is requested by a law enforcement agency not to provide such notice to the Company, nor does it limit Executive from engaging in Protected Activity, as defined below in Section 8(e).

(e) Protected Activity Not Prohibited. Nothing in this Agreement limits or prohibits Executive from filing a charge or complaint with, or otherwise communicating or cooperating with or participating in any investigation or proceeding that may be conducted by, any federal, state or local

government agency or commission, including the Securities and Exchange Commission, the Equal Employment Opportunity Commission, the Occupational Safety and Health Administration, and the National Labor Relations Board (“*Government Agencies*”), including disclosing documents or other information as permitted by law, without giving notice to, or receiving authorization from, the Company. Notwithstanding, in making any such disclosures or communications, Executive must take all reasonable precautions to prevent any unauthorized use or disclosure of any information that may constitute Company Confidential Information to any parties other than the Government Agencies. Executive is not permitted to disclose the Company’s attorney-client privileged communications or attorney work product.

9. Remedies for Breach of the Covenants.

Executive recognizes that the Company’s business interest in maintaining the confidentiality of its Confidential Information, its relationships and goodwill with its customers, and the stability of its work force, is so great that the remedy at law for Executive’s breach or threatened breach of the covenants contained in this Agreement may be an inadequate remedy. Executive agrees that, in the event of a breach or threatened breach by Executive of any of the covenants contain in this Agreement, a court of competent jurisdiction may issue a restraining order or an injunction against Executive, restraining or enjoining Executive from engaging in conduct or actions that violate the said covenant. In addition, the Company shall be entitled to any and all other remedies available to the Company at law or in equity, and no action by the Company in pursuing a given remedy shall constitute an election to forego other remedies.

10. Covenant of Ownership and Disclosure of Developments.

(a) Employment Inventions. Executive agrees to promptly disclose to the Company the existence, use, and/or manner of operation of any and all Employment Inventions. Executive acknowledges and agrees that all Employment Inventions are the sole and exclusive property of the Company. Executive hereby assigns to the Company any and all copyrights, patent rights, trade secrets, and other rights that Executive may have in any Employment Invention. Executive agrees to take all actions reasonably requested by the Company, both during and after the term of Executive’s employment, to assign to the Company and to establish, perfect, exercise or protect the Company’s rights in any Employment Inventions or title thereto, including without limitation, assisting in obtaining or registering copyrights, patents, trademarks or similar intellectual property rights and executing assignments to the Company. If the Company is unable, because of Executive’s mental or physical incapacity, geographic distance or for any other reason, to obtain Executive’s approval or signature on any document necessary or useful to claim, secure, extend, protect or enforce any right in intellectual property to which the Company has a reasonable claim, then Executive hereby appoints the Company and its duly authorized officers as Executive’s agent and attorney-in-fact to act for Executive for the purpose of accomplishing such act with the same legal force and effect as if executed by Executive. Executive will not incorporate any inventions, discoveries, ideas, original works of authorship, developments, improvements, trade secrets and other proprietary information or intellectual property rights owned by any third party into any Invention without the Company’s prior written permission.

(c) Pre-Existing Inventions. Executive will inform the Company in writing prior to incorporating any Pre-Existing Inventions into any Invention or otherwise utilizing any such Pre-Existing Inventions in the course of Executive’s employment with the Company; and the Company is hereby granted a nonexclusive, royalty-free, perpetual, irrevocable, transferable worldwide license (with the right to grant and authorize sublicenses) to make, have made, use, import, offer for sale, sell, reproduce, distribute, modify, adapt, prepare derivative works of, display, perform, and otherwise exploit such Pre-Existing Inventions, without restriction, including, without limitation, as part of or in connection with such Invention, and to practice any method related thereto.

11. Arbitration and Equitable Relief.

(a) Arbitration. IN CONSIDERATION OF EXECUTIVE'S EMPLOYMENT WITH THE COMPANY, ITS PROMISE TO ARBITRATE ALL EMPLOYMENT-RELATED DISPUTES AND EXECUTIVE'S RECEIPT OF THE COMPENSATION, PAY RAISES AND OTHER BENEFITS PAID TO ME BY THE COMPANY, AT PRESENT AND IN THE FUTURE, EXECUTIVE AGREES THAT ANY AND ALL CONTROVERSIES, CLAIMS, OR DISPUTES WITH ANYONE (INCLUDING THE COMPANY AND ANY EMPLOYEE, OFFICER, DIRECTOR, SHAREHOLDER OR BENEFIT PLAN OF THE COMPANY, IN THEIR CAPACITY AS SUCH OR OTHERWISE), ARISING OUT OF, RELATING TO, OR RESULTING FROM MY EMPLOYMENT WITH THE COMPANY OR THE TERMINATION OF MY EMPLOYMENT WITH THE COMPANY, INCLUDING ANY BREACH OF THIS AGREEMENT, SHALL BE SUBJECT TO BINDING ARBITRATION UNDER THE ARBITRATION PROVISIONS SET FORTH IN THE UTAH UNIFORM ARBITRATION ACT (THE "**RULES**") AND PURSUANT TO UTAH LAW. THE FEDERAL ARBITRATION ACT SHALL CONTINUE TO APPLY WITH FULL FORCE AND EFFECT NOTWITHSTANDING THE APPLICATION OF PROCEDURAL RULES SET FORTH IN THE ACT. DISPUTES THAT I AGREE TO ARBITRATE, AND THEREBY AGREE TO WAIVE ANY RIGHT TO A TRIAL BY JURY, INCLUDE ANY STATUTORY CLAIMS UNDER LOCAL, STATE, OR FEDERAL LAW, INCLUDING, BUT NOT LIMITED TO, CLAIMS UNDER TITLE VII OF THE CIVIL RIGHTS ACT OF 1964, THE CIVIL RIGHTS ACT OF 1991, THE AMERICANS WITH DISABILITIES ACT OF 1990, THE AGE DISCRIMINATION IN EMPLOYMENT ACT OF 1967, THE OLDER WORKERS BENEFIT PROTECTION ACT, THE WORKER ADJUSTMENT AND RETRAINING NOTIFICATION ACT, THE FAIR CREDIT REPORTING ACT, THE EMPLOYEE RETIREMENT INCOME SECURITY ACT OF 1974, THE FAMILY AND MEDICAL LEAVE ACT, THE UTAH ANTIDISCRIMINATION ACT, CLAIMS OF HARASSMENT, DISCRIMINATION AND WRONGFUL TERMINATION, AND ANY STATUTORY OR COMMON LAW CLAIMS, EXCEPT AS PROHIBITED BY LAW. NOTWITHSTANDING THE FOREGOING, I UNDERSTAND THAT NOTHING IN THIS AGREEMENT CONSTITUTES A WAIVER OF MY RIGHTS UNDER SECTION 7 OF THE NATIONAL LABOR RELATIONS ACT OR THE SARBANES-OXLEY ACT, INCLUDING ANY RIGHTS PROHIBITING COMPULSORY ARBITRATION. SIMILARLY, NOTHING IN THIS AGREEMENT PROHIBITS ME FROM ENGAGING IN PROTECTED ACTIVITY, AS SET FORTH BELOW. EXECUTIVE FURTHER UNDERSTANDS THAT THIS AGREEMENT TO ARBITRATE ALSO APPLIES TO ANY DISPUTES THAT THE COMPANY MAY HAVE WITH EXECUTIVE. EXECUTIVE AGREES THAT HE MAY ONLY COMMENCE AN ACTION IN ARBITRATION, OR ASSERT COUNTERCLAIMS IN AN ARBITRATION, ON AN INDIVIDUAL BASIS AND, THUS, HEREBY WAIVE HIS RIGHT TO COMMENCE OR PARTICIPATE IN ANY CLASS OR COLLECTIVE ACTION(S) AGAINST THE COMPANY, AS PERMITTED BY LAW.

(b) Procedure. EXECUTIVE AGREES THAT ANY ARBITRATION WILL BE ADMINISTERED BY JUDICIAL ARBITRATION & MEDIATION SERVICES, INC. ("**JAMS**"), PURSUANT TO ITS EMPLOYMENT ARBITRATION RULES & PROCEDURES (THE "**JAMS RULES**"), WHICH ARE AVAILABLE AT <http://www.jamsadr.com/rules-employment-arbitration/> AND FROM HUMAN RESOURCES. EXECUTIVE UNDERSTANDS THAT THE PARTIES TO THE ARBITRATION SHALL EACH PAY AN EQUAL SHARE OF THE COSTS AND EXPENSES OF SUCH ARBITRATION, EXCEPT AS PROHIBITED BY LAW, AND UNDERSTAND THAT EACH PARTY SHALL SEPARATELY PAY FOR ITS RESPECTIVE ATTORNEYS' FEES AND COSTS. EXECUTIVE AGREES THAT THE ARBITRATOR SHALL HAVE THE POWER TO DECIDE ANY MOTIONS BROUGHT BY ANY PARTY TO THE ARBITRATION, INCLUDING MOTIONS FOR SUMMARY JUDGMENT AND/OR ADJUDICATION, AND MOTIONS TO DISMISS, PRIOR TO

ANY ARBITRATION HEARING. EXECUTIVE AGREES THAT THE ARBITRATOR SHALL ISSUE A WRITTEN DECISION ON THE MERITS. EXECUTIVE ALSO AGREES THAT THE ARBITRATOR SHALL HAVE THE POWER TO AWARD ANY REMEDIES AVAILABLE UNDER APPLICABLE LAW. EXECUTIVE AGREES THAT THE DECREE OR AWARD RENDERED BY THE ARBITRATOR MAY BE ENTERED AS A FINAL AND BINDING JUDGMENT IN ANY COURT HAVING JURISDICTION THEREOF. EXECUTIVE AGREES THAT THE ARBITRATOR SHALL ADMINISTER AND CONDUCT ANY ARBITRATION IN ACCORDANCE WITH UTAH LAW, INCLUDING THE UTAH RULES OF CIVIL PROCEDURE AND THE UTAH RULES OF EVIDENCE, AND THAT THE ARBITRATOR SHALL APPLY SUBSTANTIVE AND PROCEDURAL UTAH LAW TO ANY DISPUTE OR CLAIM, WITHOUT REFERENCE TO RULES OF CONFLICT OF LAW. TO THE EXTENT THAT THE JAMS RULES CONFLICT WITH UTAH LAW, UTAH LAW SHALL TAKE PRECEDENCE. I AGREE THAT THE DECISION OF THE ARBITRATOR SHALL BE IN WRITING.

(c) Remedy. EXCEPT AS PROVIDED BY THE RULES AND THIS AGREEMENT, ARBITRATION SHALL BE THE SOLE, EXCLUSIVE AND FINAL REMEDY FOR ANY DISPUTE BETWEEN EXECUTIVE AND THE COMPANY. ACCORDINGLY, EXCEPT AS PROVIDED FOR BY THE RULES AND THIS AGREEMENT, NEITHER EXECUTIVE NOR THE COMPANY WILL BE PERMITTED TO PURSUE COURT ACTION REGARDING CLAIMS THAT ARE SUBJECT TO ARBITRATION.

(d) Availability of Injunctive Relief. EXECUTIVE AGREES THAT ANY PARTY MAY ALSO PETITION THE COURT FOR INJUNCTIVE RELIEF WHERE EITHER PARTY ALLEGES OR CLAIMS A VIOLATION OF THE AT-WILL EMPLOYMENT, CONFIDENTIAL INFORMATION, INVENTION ASSIGNMENT, AND ARBITRATION AGREEMENT BETWEEN EXECUTIVE AND THE COMPANY OR ANY OTHER AGREEMENT REGARDING TRADE SECRETS, INTELLECTUAL PROPERTY, CONFIDENTIAL INFORMATION, PROPRIETARY INFORMATION, NONCOMPETITION OR NONSOLICITATION. THE PARTIES UNDERSTAND THAT ANY BREACH OR THREATENED BREACH OF SUCH AN AGREEMENT WILL CAUSE IRREPARABLE INJURY AND THAT MONEY DAMAGES WILL NOT PROVIDE AN ADEQUATE REMEDY THEREFOR AND BOTH PARTIES HEREBY CONSENT TO THE ISSUANCE OF AN INJUNCTION WITHOUT POSTING OF A BOND. IN THE EVENT EITHER PARTY SEEKS INJUNCTIVE RELIEF, THE PREVAILING PARTY SHALL BE ENTITLED TO RECOVER REASONABLE COSTS AND ATTORNEYS' FEES WITHOUT REGARD FOR THE PREVAILING PARTY IN THE FINAL JUDGMENT, IF ANY. SUCH ATTORNEYS' FEES AND COSTS SHALL BE RECOVERABLE ON WRITTEN DEMAND AT ANY TIME, INCLUDING, BUT NOT LIMITED TO, PRIOR TO ENTRY OF A FINAL JUDGMENT, IF ANY, BY THE COURT, AND MUST BE PAID WITHIN THIRTY (30) DAYS AFTER DEMAND OR ELSE SUCH AMOUNTS SHALL BE SUBJECT TO THE ACCRUAL OF INTEREST AT A RATE EQUAL TO.

(e) Administrative Relief. THE PARTIES UNDERSTAND THAT THIS AGREEMENT DOES NOT PROHIBIT EITHER PARTY FROM PURSUING AN ADMINISTRATIVE CLAIM WITH A LOCAL, STATE, OR FEDERAL ADMINISTRATIVE BODY OR GOVERNMENT AGENCY THAT IS AUTHORIZED TO ENFORCE OR ADMINISTER LAWS RELATED TO EMPLOYMENT, INCLUDING, BUT NOT LIMITED TO, THE UTAH LABOR COMMISSION, THE EQUAL EMPLOYMENT OPPORTUNITY COMMISSION, THE SECURITIES AND EXCHANGE COMMISSION, THE NATIONAL LABOR RELATIONS BOARD, OR THE WORKERS' COMPENSATION BOARD. THIS AGREEMENT DOES, HOWEVER, PRECLUDE ME FROM PURSUING COURT ACTION REGARDING ANY SUCH CLAIM, EXCEPT AS PERMITTED BY LAW.

(f) Voluntary Nature of Agreement. THE PARTIES ACKNOWLEDGE AND AGREE THAT THEY ARE EXECUTING THIS AGREEMENT VOLUNTARILY AND WITHOUT ANY DURESS OR UNDUE INFLUENCE. THE PARTIES FURTHER ACKNOWLEDGE AND AGREE THAT THEY HAVE CAREFULLY READ THIS AGREEMENT AND THAT THEY HAVE ASKED ANY QUESTIONS NEEDED FOR THEM TO UNDERSTAND THE TERMS, CONSEQUENCES, AND BINDING EFFECT OF THIS AGREEMENT AND FULLY UNDERSTAND IT, INCLUDING THAT THEY ARE WAIVING THEIR RIGHT TO A JURY TRIAL. FINALLY , THE PARTIES AGREE THAT THEY HAVE EACH BEEN PROVIDED AN OPPORTUNITY TO SEEK THE ADVICE OF AN ATTORNEY OF THEIR CHOICE BEFORE SIGNING THIS AGREEMENT.

12. Submission to Jurisdiction .

Each Party irrevocably consents and agrees that any action, proceeding, or other litigation by or against any other Party or Parties with respect to any claim or cause of action based upon or arising out of or related to this Agreement or the transactions contemplated hereby, shall be brought and tried exclusively in the state and federal courts located in the City and County of New York, in the State of New York, and any such legal action or proceeding must be removed to the aforesaid courts. By execution and delivery of the Agreement, each Party accepts, for itself and in respect of its property, generally and unconditionally, the exclusive jurisdiction of the aforesaid courts. Each Party hereby irrevocably waives (a) any objection which it may now or hereafter have to the laying of venue with respect any such action, proceeding, or litigation arising out of or in connection with this Agreement or the transactions contemplated hereby brought in the aforesaid courts, and (b) any right to stay or dismiss any such action, proceeding, or litigation brought before the aforesaid courts on the basis of forum *non-conveniens* . Each Party further agrees that personal jurisdiction over it may be affected by service of process by certified mail, postage prepaid, addressed as provided in Section 16 of this Agreement, and when so made shall be as if served upon it personally within the State of New York.

13. Binding on Successors.

This Agreement shall be binding upon and inure to the benefit of the Company, the Executive and their respective successors, assigns, personnel and legal representatives, executors, administrators, heirs, distributees, devisees, and legatees, as applicable. The Company may assign its rights and obligations under this Agreement to any successor to all or substantially all of the business or the assets of the Company. The Executive may not assign the Executive's rights or obligations under this Agreement other than the Executive's rights to payments hereunder, which may only be assigned by will or the operation of the laws of descent and distribution.

14. Governing Law.

This Agreement shall be governed, construed, interpreted and enforced in accordance with the substantive laws of the State of Utah, without reference to the principles of conflicts of law of the State of Utah or any other jurisdiction, and where applicable, the laws of the United States.

15. Validity.

The invalidity or unenforceability of any provision or provisions of this Agreement shall not affect the validity or enforceability of any other provision of this Agreement, which shall remain in full force and effect.

16. Notices.

All notices, requests, demands, and other communications required or permitted to be given under this Agreement by any Party shall be in writing delivered, if to the Company, to the address set forth below, and if to Executive, to the address set forth on the signature page hereto, or to such other address as any Party may designate from time to time by written notice to all other Parties. Each such notice, request, demand, or other communication shall be deemed given and effective, as follows: (i) if sent by hand delivery, upon delivery; (ii) if sent by first-class U.S. Mail, postage prepaid, upon the earlier to occur of receipt or three (3) days after deposit in the U.S. Mail; (iii) if sent by a recognized prepaid overnight courier service, one (1) day after the date it is given to such service; (iv) if sent by facsimile, upon receipt of confirmation of successful transmission by the facsimile machine; and (v) if sent by email, upon acknowledgement of receipt by the recipient.

VIVINT SOLAR, INC.
Address: 1800 West Ashton Boulevard
City, State Zip: Lehi, Utah 84043
Attention: David Bywater
Chief Executive Officer

WITH COPY TO:

VIVINT SOLAR, INC.
Address: 1800 West Ashton Boulevard
City, State Zip: Lehi, Utah 84043
Attention: Legal Department

17. Counterparts.

This Agreement may be executed in several counterparts, each of which shall be deemed to be an original, but all of which together will constitute one and the same Agreement.

18. Entire Agreement.

The terms of this Agreement are intended by the parties to be the final expression of their agreement with respect to the employment of the Executive by the Company and may not be contradicted by evidence of any prior or contemporaneous agreement. The parties further intend that this Agreement shall constitute the complete and exclusive statement of its terms and that no extrinsic evidence whatsoever may be introduced in any judicial, administrative, or other legal proceeding to vary the terms of this Agreement. The parties agree that the Prior Employment Agreement is hereby terminated, and this Agreement replaces and supersedes the Prior Employment Agreement in its entirety.

19. Amendments; Waivers.

This Agreement may not be modified, amended, or terminated except by an instrument in writing, signed by the Executive and the Chief Operating Officer. By an instrument in writing similarly executed, the Executive or the Company may waive compliance by the other party or parties with any provision of this Agreement that such other party was or is obligated to comply with or perform, provided, however, that such waiver shall not operate as a waiver of, or estoppel with respect to, any other or subsequent failure. No failure to exercise and no delay in exercising any right, remedy, or power hereunder preclude any other or further exercise of any other right, remedy, or power provided herein or by law or in equity.

20. No Inconsistent Actions.

The parties hereto shall not voluntarily undertake or fail to undertake any action or course of action inconsistent with the provisions or essential intent of this Agreement. Furthermore, it is the intent of the parties hereto to act in a fair and reasonable manner with respect to the interpretation and application of the provisions of this Agreement.

21. Claw-back.

All compensation received by Executive shall be subject to the provisions of any claw-back policy implemented by the Company to comply with applicable law, regulation or stock exchange rule, including, without limitation, any claw-back policy adopted to comply with the requirements of the Dodd-Frank Wall Street Reform and Consumer Protection Act and any rules or regulations promulgated thereunder.

22. Section 409A.

(a) Notwithstanding anything to the contrary in this Agreement, no payment or benefit to be paid or provided to Executive, if any, pursuant to this Agreement that, when considered together with any other severance payments or separation benefits, is considered deferred compensation under Section 409A of the Internal Revenue Code of 1986, as amended (the “*Code*”), and the final regulations and any guidance promulgated thereunder (“*Section 409A*”) (together, the “*Deferred Payments*”) shall be paid or otherwise provided until Executive has a “separation from service” within the meaning of Section 409A. Similarly, no severance payable to Executive, if any, pursuant to this Agreement that otherwise would be exempt from Section 409A pursuant to Treasury Regulation Section 1.409A-1(b)(9) shall be payable until Executive has a “separation from service” within the meaning of Section 409A.

(b) It is intended that none of the payments under this Agreement will constitute “Deferred Payments” but rather will be exempt from Section 409A as a payment that would fall within the “short-term deferral period” as described in Section 22(d) below or resulting from an involuntary separation from service as described in Section 22(c)(e) below. However, any severance payments or benefits under this Agreement that would be considered Deferred Payments shall be paid on, or, in the case of installments, shall not commence until, the 61st day following Executive’s separation from service, or, if later, such time as required by Section 22(c). Except as required by Section 22(c), any installment payments that would have been made to Executive during the 60 day period immediately following Executive’s separation from service but for the preceding sentence shall be paid to Executive on the 61st day following Executive’s separation from service and the remaining payments shall be made as provided in this Agreement.

(c) Notwithstanding anything to the contrary in this Agreement, if Executive is a “specified employee” within the meaning of Section 409 A at the time of Executive’s termination (other than due to death), then the Deferred Payments, if any, that are payable within the first six months following Executive’s separation from service, shall become payable on the first payroll date that occurs on or after the date six months and one day following the date of Executive’s separation from service. All subsequent Deferred Payments, if any, shall be payable in accordance with the payment schedule applicable to each payment or benefit. Notwithstanding anything herein to the contrary, if Executive dies following Executive’s separation from service, but before the six month anniversary of the separation from service, then any payments delayed in accordance with this paragraph shall be payable in a lump sum as soon as administratively practicable after the date of Executive’s death and all other Deferred Payments shall be payable in accordance with the payment schedule applicable to each payment or benefit. Each payment and benefit payable under this Agreement is intended to constitute a separate payment under Section 1.409A-2(b)(2) of the Treasury Regulations.

(d) Any amount paid under this Agreement that satisfies the requirements of the “short-term deferral” rule set forth in Section 1.409A-1 (b)(4) of the Treasury Regulations shall not constitute Deferred Payments for purposes of Section 22(a) above.

(e) Any amount paid under this Agreement that qualifies as a payment made as a result of an involuntary separation from service pursuant to Section 1.409A-1 (b)(9)(iii) of the Treasury Regulations that does not exceed the Section 409A Limit (as defined below) shall not constitute Deferred Payments for purposes of Section 22(a) above.

(f) The foregoing provisions are intended to comply with the requirements of Section 409A so that none of the severance payments and benefits to be provided hereunder shall be subject to the additional tax imposed under Section 409A, and any ambiguities herein shall be interpreted to so comply. The Company and Executive agree to work together in good faith to consider amendments to this Agreement and to take such reasonable actions which are necessary, appropriate or desirable to avoid imposition of any additional tax or income recognition before actual payment to Executive under Section 409A. In no event will the Company reimburse Executive for any tax obligations incurred by Executive as a result of the application of Section 409A.

23. Golden Parachute Excise Tax Best Results.

In the event that the severance and other benefits provided for in this agreement or otherwise payable to Executive (a) constitute “parachute payments” within the meaning of Code Section 280G and (b) would be subject to the excise tax imposed by Code Section 4999, then such benefits shall be either:

- (a) delivered in full, or
- (b) delivered as to such lesser extent which would result in no portion of such severance benefits being subject to excise tax under Section 4999 of the Code,

whichever of the foregoing amounts, taking into account the applicable federal, state and local income and employment taxes and the excise tax imposed by Code Section 4999, results in the receipt by Executive, on an after-tax basis, of the greatest amount of benefits, notwithstanding that all or some portion of such benefits may be taxable under Code Section 4999. Unless the Company and Executive otherwise agree in writing, the determination of Executive’s excise tax liability and the amount required to be paid under this Section 23 shall be made in writing by a nationally recognized certified professional services firm selected by the Company, the Company’s legal counsel or such other person or entity to which the parties mutually agree (the “*Firm*”). For purposes of making the calculations required by this Section 23, the Firm may make reasonable assumptions and approximations concerning applicable taxes and may rely on reasonable, good faith interpretations concerning the application of Code Sections 280G and 4999. The Company and Executive shall furnish to the Firm such information and documents as the Firm may reasonably request in order to make a determination under this Section 23. The Company shall bear all costs the Firm may reasonably incur in connection with any calculations contemplated by this Section 23. Any reduction in payments and/or benefits required by this Section 23 shall occur in the following order: (i) reduction of cash payments; (ii) cancellation of awards granted “contingent on a change in ownership or control” (within the meaning of Code Section 280G); (iii) cancellation of accelerated vesting of equity awards; or (iv) reduction of employee benefits. In the event that acceleration of vesting of equity award compensation is to be reduced, such acceleration of vesting will be cancelled in the reverse order of the date of grant of Executive’s equity awards. If two or more equity compensation awards are granted on the same date, each award shall be reduced on a pro-rata basis.

24. Survival.

The provisions of this Agreement shall survive the termination of Executive 's employment with the Company.

[SIGNATURE PAGE FOLLOWS]

IN WITNESS WHEREOF, the parties have executed this Agreement on the date and year first above written.

COMPANY

VIVINT SOLAR, INC.

By: /s/ David Bywater_____

Name: David Bywater

Title: Chief Executive Officer

Dated: January 1, 2019

EXECUTIVE

Thomas Plagemann, an individual

/s/ Thomas Plagemann_____

(Signature)

Dated: January 1, 2019

E X H I B I T A
R E L E A S E O F C L A I M S

THIS RELEASE OF CLAIMS (this “ *Agreement* ”) is made by and between Vivint Solar, Inc. (the “ *Company* ”), and _____ (“ *Employee* ”). The Company and Employee are sometimes collectively referred to herein as the “ *Parties* ” and individually referred to as a “ *Party* ”.

R E C I T A L S

WHEREAS, Employee was employed by the Company until _____, 20__, when Employee’s employment was terminated (“ *Termination Date* ”);

WHEREAS, Employee signed an Executive Employment Agreement with the Company, effective as of _____ (the “ *Proprietary Rights Agreement* ”);

WHEREAS, in accordance with Section 5[(b)]/[(c)] of that certain Involuntary Termination Protection Agreement between the Company and Employee, effective as of _____ (the “ *Termination Agreement* ”), Employee has agreed to enter into and not revoke a standard release of claims in favor of the Company as a condition to receiving the severance benefits described in the Termination Agreement; and

WHEREAS, the Parties wish to resolve any and all disputes, claims, complaints, grievances, charges, actions, petitions and demands that Employee may have against the Company and any of the Releasees (as defined below), including, but not limited to, any and all claims arising out of or in any way related to Employee’s employment relationship with the Company and the termination of that relationship.

NOW THEREFORE, for good and valuable consideration, including the mutual promises and covenants made herein, the Company and Employee hereby agree as follows:

C O V E N A N T S

1. Termination . Employee’s employment with the Company terminated on the Termination Date.

2. Payment of Salary and Receipt of All Benefits . Employee acknowledges and represents that, other than the consideration to be paid in accordance with the terms and conditions of the Termination Agreement, the Company has paid or provided all salary, wages, bonuses, accrued vacation/paid time off, premiums, leaves, housing allowances, relocation costs, interest, severance, outplacement costs, fees, reimbursable expenses, commissions, draws, stock, stock options or other equity awards (including restricted stock unit awards), vesting, and any and all other benefits and compensation due to Employee and that no other reimbursements or compensation are owed to Employee.

3. Release of Claims . Employee agrees that the consideration to be paid in accordance with the terms and conditions of the Termination Agreement represents settlement in full of all outstanding obligations owed to Employee by the Company and its current and former officers, directors, employees, agents, investors, attorneys, stockholders, administrators, affiliates, benefit plans, plan administrators, insurers, trustees, divisions, and subsidiaries, and predecessor and successor corporations and assigns (collectively, the “ *Releasees* ”). Employee, on Employee’s own behalf and on behalf of Employee’s respective heirs, family members, executors, agents, and assigns, hereby and forever releases the

Releasees from, and agrees not to sue concerning, or in any manner to institute, prosecute, or pursue, any claim, complaint, charge, duty, obligation, demand, or cause of action relating to any matters of any kind, whether presently known or unknown, suspected or unsuspected, that Employee may possess against any of the Releasees arising from any omissions, acts, facts, or damages that have occurred up until and including the Effective Date of this Agreement, including, without limitation the following:

(a) any and all claims relating to or arising from Employee's employment relationship with the Company and the termination of that relationship;

(b) any and all claims relating to, or arising from, Employee's right to purchase, or actual purchase of shares of stock of the Company, including, without limitation, any claims for fraud, misrepresentation, breach of fiduciary duty, breach of duty under applicable state corporate law, and securities fraud under any state or federal law;

(c) any and all claims for wrongful discharge of employment; termination in violation of public policy; discrimination; harassment; retaliation; breach of contract, both express and implied; breach of covenant of good faith and fair dealing, both express and implied; promissory estoppel; negligent or intentional infliction of emotional distress; fraud; negligent or intentional misrepresentation; negligent or intentional interference with contract or prospective economic advantage; unfair business practices; defamation; libel; slander; negligence; personal injury; assault; battery; invasion of privacy; false imprisonment; conversion; and disability benefits;

(d) any and all claims for violation of any federal, state, or municipal statute, including, but not limited to, Title VII of the Civil Rights Act of 1964; the Civil Rights Act of 1991; the Rehabilitation Act of 1973; the Americans with Disabilities Act of 1990; the Equal Pay Act; the Fair Labor Standards Act; the Fair Credit Reporting Act; the Age Discrimination in Employment Act of 1967; the Older Workers Benefit Protection Act; the Employee Retirement Income Security Act of 1974; the Worker Adjustment and Retraining Notification Act; the Family and Medical Leave Act; the Sarbanes-Oxley Act of 2002; the Utah Antidiscrimination Act; the California Family Rights Act; the California Equal Pay Law; the California Unruh Civil Rights Act; the California Workers' Compensation Act; the California Labor Code; and the California Fair Employment and Housing Act; the Utah Antidiscrimination Act;

(e) any and all claims for violation of the federal, or any state, constitution;

(f) any and all claims arising out of any other laws and regulations relating to employment or employment discrimination;

(g) any claim for any loss, cost, damage, or expense arising out of any dispute over the nonwithholding or other tax treatment of any of the proceeds received by Employee as a result of this Agreement; and

(h) any and all claims for attorneys' fees and costs.

Employee agrees that the release set forth in this Section 3 (the "**Release**") shall be and remain in effect in all respects as a complete general release as to the matters released. The Release does not extend to any severance obligations due Employee under the Termination Agreement. The Release does not release claims that cannot be released as a matter of law, including, but not limited to, Employee's right to file a charge with or participate in a charge by the Equal Employment Opportunity Commission, or any other local, state, or federal administrative body or government agency that is authorized to enforce or administer laws related to employment, against the Company (with the understanding that any such filing

or participation does not give Employee the right to recover any monetary damages against the Company; Employee's release of claims herein bars Employee from recovering such monetary relief from the Company). Employee represents that Employee has made no assignment or transfer of any right, claim, complaint, charge, duty, obligation, demand, cause of action, or other matter waived or released by this Section 3. Nothing in this Agreement waives Employee's (i) rights under that certain Indemnification Agreement between the Company and Employee, effective as of [DATE] (the "**Indemnification Agreement**"), or (ii) rights to indemnification or any payments under any fiduciary insurance policy, if any, provided by any act or agreement of the Company, state or federal law or policy of insurance.

4. Acknowledgment of Waiver of Claims under ADEA. Employee acknowledges that Employee is waiving and releasing any rights Employee may have under the Age Discrimination in Employment Act of 1967 ("**ADEA**") and that this waiver and release is knowing and voluntary. Employee agrees that this waiver and release does not apply to any rights or claims that may arise under the ADEA after the Effective Date of this Agreement. Employee acknowledges that the consideration given for this waiver and release Agreement is in addition to anything of value to which Employee was already entitled. Employee further acknowledges that Employee has been advised by this writing that (a) Employee should consult with an attorney *prior* to executing this Agreement; (b) Employee has at least 21 days within which to consider this Agreement; (c) Employee has 7 days following the execution of this Agreement by the parties to revoke the Agreement; (d) this Agreement shall not be effective until the revocation period has expired; and (e) nothing in this Agreement prevents or precludes Employee from challenging or seeking a determination in good faith of the validity of this waiver under the ADEA, nor does it impose any condition precedent, penalties or costs for doing so, unless specifically authorized by federal law. In the event Employee signs this Agreement and delivers it to the Company in less than the 21-day period identified above, Employee hereby acknowledges that Employee has freely and voluntarily chosen to waive the time period allotted for considering this Agreement. Employee acknowledges and understands that revocation must be accomplished by a written notification to the Chief Legal Officer of the Company that is received prior to the Effective Date.

5. Unknown Claims. Employee acknowledges that Employee has been advised to consult with legal counsel and that Employee is familiar with the principle that a general release does not extend to claims that the releaser does not know or suspect to exist in Employee's favor at the time of executing the release, which, if known by Employee, must have materially affected Employee's settlement with the releasee. Employee, being aware of this principle, agrees to expressly waive any rights Employee may have to that effect, as well as under any other statute or common law principles of similar effect.

6. No Pending or Future Lawsuits. Employee represents that Employee has no lawsuits, claims, or actions pending in Employee's name, or on behalf of any other person or entity, against the Company or any of the other Releasees. Employee also represents that Employee does not intend to bring any claims on Employee's own behalf or on behalf of any other person or entity against the Company or any of the other Releasees. Employee confirms that Employee has no knowledge of any wrongdoing involving improper or false claims against a federal or state governmental agency, or any other wrongdoing that involves Employee or any other present or former Company employees, including violations of the federal and state securities laws or the Sarbanes-Oxley Act of 2002.

7. Confidential Information. Employee reaffirms and agrees to observe and abide by the terms of the Executive Employment Agreement, specifically including the provisions therein regarding nondisclosure of the Company's trade secrets and confidential and proprietary information, which agreement shall continue in force.

8. Return of Company Property; Passwords and Password-protected Documents. Employee confirms that Employee has returned to the Company in good working order all keys, files, records (and copies thereof), equipment (including, but not limited to, computer hardware, software and printers, wireless handheld devices, cellular phones and pagers), access or credit cards, Company identification, and any other Company-owned property in Employee's possession or control. Employee further confirms that Employee has cancelled all accounts for Employee's benefit, if any, in the Company's name, including, but not limited to, credit cards, telephone charge cards, cellular phone and/or pager accounts and computer accounts. Employee also confirms that Employee has delivered all passwords in use by Employee at the time of Employee's termination, a list of any documents that Employee created or of which Employee is otherwise aware that are password-protected, along with the password(s) necessary to access such password-protected documents.

9. No Cooperation. Employee agrees that Employee will not knowingly encourage, counsel, or assist any attorneys or their clients in the presentation or prosecution of any disputes, differences, grievances, claims, charges, or complaints by any third party against any of the Releasees, unless under a subpoena or other court order to do so or as related directly to the ADEA waiver in this Agreement. Employee agrees both to immediately notify the Company upon receipt of any such subpoena or court order, and to furnish, within three (3) business days of its receipt, a copy of such subpoena or other court order. If approached by anyone for counsel or assistance in the presentation or prosecution of any disputes, differences, grievances, claims, charges, or complaints against any of the Releasees, Employee shall state no more than that Employee cannot provide any such counsel or assistance.

10. Breach. In addition to the rights provided in the Section 11 below, Employee acknowledges and agrees that any material breach of this Agreement (unless such breach constitutes a legal action by Employee challenging or seeking a determination in good faith of the validity of the waiver herein under the ADEA), or of any provision of the Proprietary Rights Agreement, shall entitle the Company immediately to recover and/or cease providing the consideration provided to Employee under this Agreement and to obtain damages, except as provided by law, *provided, however*, that the Company shall not recover One Hundred Dollars (\$100.00) of the consideration already paid pursuant to this Agreement and such amount shall serve as full and complete consideration for the promises and obligations assumed by Employee under this Agreement and the Proprietary Rights Agreement.

11. Attorneys' Fees. In the event that either Party brings an action to enforce or effect its rights under this Agreement, the prevailing Party shall be entitled to recover its costs and expenses, including the costs of mediation, arbitration, litigation, court fees, and reasonable attorneys' fees incurred in connection with such an action.

12. No Admission of Liability. Employee understands and acknowledges that this Agreement constitutes a compromise and settlement of any and all actual or potential disputed claims by Employee. No action taken by the Company hereto, either previously or in connection with this Agreement, shall be deemed or construed to be (a) an admission of the truth or falsity of any actual or potential claims or (b) an acknowledgment or admission by the Company of any fault or liability whatsoever to Employee or to any third party.

13. Noncompetition/Nonsolicitation/Nondisparagement. Employee agrees to adhere to the noncompetition, nonsolicitation, and the nondisparagement restrictions set forth in the Employment Agreement.

14. Costs. The Parties shall each bear their own costs, attorneys' fees and other fees incurred in connection with the preparation of this Agreement.

15. Arbitration. THE PARTIES AGREE THAT ANY AND ALL DISPUTES ARISING OUT OF THE TERMS OF THIS AGREEMENT, THEIR INTERPRETATION, AND ANY OF THE MATTERS HEREIN RELEASED, SHALL BE SUBJECT TO ARBITRATION IN UTAH COUNTY IN THE STATE OF UTAH, BEFORE JUDICIAL ARBITRATION & MEDIATION SERVICES ("JAMS"), PURSUANT TO ITS EMPLOYMENT ARBITRATION RULES & PROCEDURES ("JAMS RULES"). THE ARBITRATOR MAY GRANT INJUNCTIONS AND OTHER RELIEF IN SUCH DISPUTES. THE ARBITRATOR SHALL ADMINISTER AND CONDUCT ANY ARBITRATION IN ACCORDANCE WITH UTAH LAW, INCLUDING THE UTAH RULES OF CIVIL PROCEDURE, AND THE ARBITRATOR SHALL APPLY SUBSTANTIVE AND PROCEDURAL UTAH LAW TO ANY DISPUTE OR CLAIM, WITHOUT REFERENCE TO ANY CONFLICT-OF-LAW PROVISIONS OF ANY JURISDICTION. TO THE EXTENT THAT THE JAMS RULES CONFLICT WITH UTAH LAW, UTAH LAW SHALL TAKE PRECEDENCE. THE DECISION OF THE ARBITRATOR SHALL BE FINAL, CONCLUSIVE, AND BINDING ON THE PARTIES TO THE ARBITRATION. THE PARTIES AGREE THAT THE PREVAILING PARTY IN ANY ARBITRATION SHALL BE ENTITLED TO INJUNCTIVE RELIEF IN ANY COURT OF COMPETENT JURISDICTION TO ENFORCE THE ARBITRATION AWARD. THE PARTIES TO THE ARBITRATION SHALL EACH PAY AN EQUAL SHARE OF THE COSTS AND EXPENSES OF SUCH ARBITRATION, AND EACH PARTY SHALL SEPARATELY PAY FOR ITS RESPECTIVE COUNSEL FEES AND EXPENSES; PROVIDED, HOWEVER, THAT THE ARBITRATOR SHALL AWARD ATTORNEYS' FEES AND COSTS TO THE PREVAILING PARTY, EXCEPT AS PROHIBITED BY LAW. THE PARTIES HEREBY AGREE TO WAIVE THEIR RIGHT TO HAVE ANY DISPUTE BETWEEN THEM RESOLVED IN A COURT OF LAW BY A JUDGE OR JURY. NOTWITHSTANDING THE FOREGOING, THIS SECTION 15 WILL NOT PREVENT EITHER PARTY FROM SEEKING INJUNCTIVE RELIEF (OR ANY OTHER PROVISIONAL REMEDY) FROM ANY COURT HAVING JURISDICTION OVER THE PARTIES AND THE SUBJECT MATTER OF THEIR DISPUTE RELATING TO THIS AGREEMENT AND THE AGREEMENTS INCORPORATED HEREIN BY REFERENCE. SHOULD ANY PART OF THE ARBITRATION AGREEMENT CONTAINED IN THIS PARAGRAPH CONFLICT WITH ANY OTHER ARBITRATION AGREEMENT BETWEEN THE PARTIES, THE PARTIES AGREE THAT THIS ARBITRATION AGREEMENT SHALL GOVERN.

16. Authority. The Company represents and warrants that the undersigned has the authority to act on behalf of the Company and to bind the Company and all who may claim through it to the terms and conditions of this Agreement. Employee represents and warrants that Employee has the capacity to act on Employee's own behalf and on behalf of all who might claim through Employee to bind them to the terms and conditions of this Agreement. Each Party warrants and represents that there are no liens or claims of lien or assignments in law or equity or otherwise of or against any of the claims or causes of action released herein.

17. No Representations. Employee represents that Employee has had the opportunity to consult with an attorney, and has carefully read and understands the scope and effect of the provisions of this Agreement. Employee has relied upon any representations or statements made by the Company that are not specifically set forth in this Agreement.

18. Severability. In the event that any provision or any portion of any provision hereof or any surviving agreement made a part hereof becomes or is declared by a court of competent jurisdiction

or arbitrator to be illegal, unenforceable, or void, this Agreement shall continue in full force and effect without said provision or portion of provision.

19. Entire Agreement. This Agreement represents the entire agreement and understanding between the Company and Employee concerning the subject matter of this Agreement and Employee's employment with and separation from the Company and the events leading thereto and associated therewith, and supersedes and replaces any and all prior agreements and understandings concerning the subject matter of this Agreement and Employee's relationship with the Company, with the exception of the Proprietary Rights Agreement, the Termination Agreement, the Indemnification Agreement, and Employee's written equity compensation agreements with the Company.

20. No Oral Modification. This Agreement may only be amended in writing signed by Employee and the Chairman of the Compensation Committee of the Board of Directors of the Company.

21. Governing Law. The validity, interpretation, construction and performance of this Agreement shall be governed by the laws of the State of Utah, without regard to the choice-of-law provisions. The Utah state courts located in Utah County, Utah and/or the United States District Court for the District of Utah, located in Provo, Utah, shall have exclusive jurisdiction and venue over all controversies relating to or arising out of this Agreement. Employee hereby expressly consents to the exclusive jurisdiction and venue of the Utah state courts in Utah County, Utah and/or the United States District Court for the District of Utah for any disputes arising out of or relating to this Agreement.

22. Effective Date. Employee understands that this Agreement shall be null and void if not executed by Employee within 21 days. Each Party has seven days after that Party signs this Agreement to revoke it. This Agreement will become effective on the eighth (8th) day after Employee signed this Agreement, so long as it has been signed by the Parties and has not been revoked by either Party before that date (the "*Effective Date*").

23. Counterparts. This Agreement may be executed in counterparts and by facsimile, and each counterpart and facsimile shall have the same force and effect as an original and shall constitute an effective, binding agreement on the part of each of the undersigned.

24. Voluntary Execution of Agreement. Employee understands and agrees that Employee executed this Agreement voluntarily, without any duress or undue influence on the part or behalf of the Company or any third party, with the full intent of releasing all of Employee's claims against the Company and any of the other Releasees. Employee expressly acknowledges that:

- (a) Employee has read this Agreement;
- (b) Employee has been represented in the preparation, negotiation, and execution of this Agreement by legal counsel of Employee's own choice or has elected not to retain legal counsel;
- (c) Employee understands the terms and consequences of this Agreement and of the releases it contains; and
- (d) Employee is fully aware of the legal and binding effect of this Agreement.

[SIGNATURE PAGE FOLLOWS]

IN WITNESS WHEREOF , the Parties have executed this Agreement on the respective dates set forth below.

COMPANY

VIVINT SOLAR, INC.

By: _____

Name: _____

Title: _____

Dated: _____

EMPLOYEE

Thomas Plagemann, an individual

(Signature)

Dated: _____

THIRD AMENDMENT TO LEASE

T-Stat One, LLC / Vivint Solar, Inc.

THIS AMENDMENT (this “*Amendment*”) is entered into as of the ____ day of February, 2019, between **T-STAT ONE, LLC**, a Utah limited liability company (“*Landlord*”), and **VIVINT SOLAR, INC.**, a Delaware corporation (“*Tenant*”). (Landlord and Tenant are referred to in this Amendment collectively as the “*Parties*” and individually as a “*Party*.”)

FOR GOOD AND VALUABLE CONSIDERATION, the receipt and sufficiency of which are acknowledged, the Parties agree as follows:

1. Definition—Lease. As used in this Amendment, “*Lease*” means the Lease, dated September 15, 2014 (on the cover page), as amended by the First Amendment to Lease, dated July 20, 2015, the Commencement Date Certificate, dated on or about April 1, 2016, and the Second Amendment to Lease, dated October 4, 2016, all entered into between Landlord, as landlord, and Tenant, as tenant, and, where applicable, as amended by this Amendment. Any term used in this Amendment that not defined shall have the same meaning as set forth in the Lease.

2. Purpose. The Parties have agreed to extend the Term in accordance with the terms and conditions set forth in this Amendment.

3. Basic Monthly Rent. Effective as of, and for the period on and after, June 1, 2028, the definition of “Basic Monthly Rent” set forth in Paragraph 1 of the Lease is revised to read as follows:

“*Basic Monthly Rent*” means the following amounts per calendar month for the periods indicated, based on 152,150 rentable square feet, which amounts are subject to adjustment as set forth in the definition of “Premises”:

<u>Periods</u>	<u>Basic Monthly Rent</u>	<u>Annual Cost Per Rentable Square Foot</u>
June 1, 2028 through July 31, 2028, inclusive	\$114,112.50 per month	\$9.00
August 1, 2028 through May 31, 2029, inclusive	\$412,072.92 per month	\$32.50
June 1, 2029 through May 31, 2030, inclusive	\$422,343.04 per month	\$33.31
June 1, 2030 through May 31, 2031, inclusive	\$432,993.54 per month	\$34.15

4. Expiration Date. The definition of “Expiration Date” set forth in Paragraph 1 of the Lease is revised to read as follows:

“*Expiration Date*” means May 31, 2031.

5. Tenant Improvements. On June 1, 2028, Landlord shall provide Tenant with a tenant improvement allowance (the “ **TI Allowance** ”) of \$ 821,448.00 (\$ 6.00 x 136,908 usable square feet) for tenant improvements (the “ **Tenant Improvements** ”) to be made by Landlord to the Premises. The Parties shall exert good faith, commercially reasonable efforts to agree on the Tenant Improvements and a budget therefor. Such agreed on Tenant Improvements shall then be made by Landlord in accordance with such budget as soon as reasonably practicable after such agreement. Tenant shall pay to Landlord all costs and expenses incurred by Landlord in connection with the Tenant Improvements, less the TI Allowance, within thirty (30) days after the date of an invoice therefor, which invoice may be delivered prior to the commencement of construction. If all or any portion of the TI Allowance is not used on or before May 31, 2029 , the TI Allowance or such portion that is not used shall be lost and shall no longer be available to Tenant.

6. Enforceability . Each Party represents and warrants that:

(a) such Party was duly formed and is validly existing and in good standing under the laws of the state of its formation;

(b) such Party has the requisite power and authority under all applicable laws and its governing documents to execute, deliver and perform its obligations under this Amendment;

(c) the individual executing this Amendment on behalf of such Party has full power and authority under such Party’s governing documents to execute and deliver this Amendment in the name of, and on behalf of, such Party and to cause such Party to perform its obligations under this Amendment;

(d) this Amendment has been duly authorized, executed and delivered by such Party; and

(e) this Amendment is the legal, valid and binding obligation of such Party, and is enforceable against such Party in accordance with its terms.

7. Brokerage Commissions . Except as may be set forth in one or more separate agreements between (i) Landlord and Landlord’s broker, or (ii) Landlord or Landlord’s broker and Tenant’s broker:

(a) Landlord represents and warrants to Tenant that no claim exists for a brokerage commission, finder’s fee or similar fee in connection with this Amendment based on any agreement made by Landlord; and

(b) Tenant represents and warrants to Landlord that no claim exists for a brokerage commission, finder’s fee or similar fee in connection with this Amendment based on any agreement made by Tenant.

Landlord shall indemnify, defend and hold harmless Tenant from and against any claim for a brokerage commission, finder’s fee or similar fee in connection with this Amendment based on an actual or alleged agreement made by Landlord. Tenant shall indemnify, defend and hold harmless Landlord from and against any claim for a brokerage commission, finder’s fee or similar fee in connection with this Amendment based on an actual or alleged agreement made by Tenant.

8. Entire Agreement. The Lease, as amended by this Amendment, exclusively encompasses the entire agreement of the Parties, and supersedes all previous negotiations, understandings and agreements between the Parties, whether oral or written, including, without limitation, any oral discussions, letters of intent and email correspondence. The Parties acknowledge and represent, by their signatures below, that the Parties have not relied on any representation, understanding, information, discussion, assertion, guarantee, warranty, collateral contract or other assurance, except those expressly set forth in the Lease and this Amendment, made by or on behalf of any other Party or any other person whatsoever, prior to the execution of this Amendment. The Parties waive all rights and remedies, at law or in equity, arising or which may arise as the result of a Party's reliance on such representation, understanding, information, discussion, assertion, guarantee, warranty, collateral contract or other assurance.

9. General Provisions. In the event of any conflict between the provisions of the Lease and the provisions of this Amendment, the provisions of this Amendment shall control. Except as set forth in this Amendment, the Lease (which, by definition, includes all previous amendments) is ratified and affirmed in its entirety. This Amendment shall inure to the benefit of, and be binding on, the Parties and their respective successors and assigns. This Amendment shall be governed by, and construed and interpreted in accordance with, the laws (excluding the choice of laws rules) of the state of Utah. This Amendment may be executed in any number of duplicate originals or counterparts, each of which when so executed shall constitute in the aggregate but one and the same document.

[Remainder of page intentionally left blank: signatures on following page]

THE PARTIES have executed this Amendment on the respective dates set forth below, to be effective as of the date first set forth above.

LANDLORD :

T-STAT ONE, LLC ,
a Utah limited liability company

By /s/ Andrew Bybee

Print or Type Name of Signatory:

Andrew Bybee

Its Authorized Agent

Date February 27, 2019

TENANT :

VIVINT SOLAR, INC. ,
a Delaware corporation

By /s/ Dana Russell

Print or Type Name of Signatory:

Dana Russell

Its Chief Financial Officer

Date February 22, 2019

List of Subsidiaries of the Company as of December 31, 2018

Name of Subsidiary	Jurisdiction of Incorporation
Vivint Solar Holdings, Inc. (f/k/a Vivint Solar, Inc.)	Delaware
Vivint Solar Developer , LLC	Delaware
Vivint Solar Provider, LLC	Delaware
Vivint Solar Servicer, LLC	Delaware
Solmetric Corporation	California
Vivint Solar Margaux Manager , LLC	Delaware
Vivint Solar Margaux Owner , LLC	Delaware
Vivint Solar Margaux Master Tenant , LLC	Delaware
Vivint Solar Fund III Manager , LLC	Delaware
Vivint Solar Fund III Owner , LLC	Delaware
Vivint Solar Fund III Master Tenant , LLC	Delaware
Vivint Solar Mia Manager , LLC	Delaware
Vivint Solar Mia Project Company , LLC	Delaware
Vivint Solar Aaliyah Manager , LLC	Delaware
Vivint Solar Aaliyah Project Company , LLC	Delaware
Vivint Solar Hannah Manager, LLC	Delaware
Vivint Solar Hannah Project Company, LLC	Delaware
Vivint Solar Rebecca Manager, LLC	Delaware
Vivint Solar Rebecca Project Company, LLC	Delaware
Vivint Solar Elyse Manager, LLC	Delaware
Vivint Solar Elyse Project Company, LLC	Delaware
Vivint Solar Nicole Manager , LLC	Delaware
Vivint Solar Nicole Owner, LLC	Delaware
Vivint Solar Nicole Master Tenant, LLC	Delaware
Vivint Solar Financing I Parent, LLC	Delaware
Vivint Solar Financing I, LLC	Delaware
Vivint Solar Financing I NYGB Parent, LLC	Delaware
Vivint Solar Financing I NYGB, LLC	Delaware
Vivint Solar Operations, LLC	Delaware
Vivint Solar Licensing, LLC	Delaware
Vivint Solar Fund X Manager, LLC	Delaware
Vivint Solar Fund X Project Company, LLC	Delaware
Vivint Solar Fund XI Manager, LLC	Delaware
Vivint Solar Fund XI Project Company, LLC	Delaware
Vivint Solar Fund XII Manager, LLC	Delaware
Vivint Solar Fund XII Project Company, LLC	Delaware
Vivint Solar Fund XIII Manager, LLC	Delaware
Vivint Solar Fund XIII Project Company, LLC	Delaware
Vivint Solar Owner I, LLC	Delaware
Vivint Solar Financing Holdings, LLC	Delaware
Vivint Solar Financing Holdings Parent, LLC	Delaware
Vivint Solar Fund XIV Manager, LLC	Delaware
Vivint Solar Fund XIV Project Company, LLC	Delaware
Vivint Solar Fund XV Manager, LLC	Delaware
Vivint Solar Fund XV Project Company, LLC	Delaware
Vivint Solar Fund XVI Manager, LLC	Delaware
Vivint Solar Fund XVI Lessor, LLC	Delaware
Vivint Solar Commercial Developer , LLC	Delaware
Vivint Solar Commercial Provider, LLC	Delaware
Vivint Solar Commercial Holdings, LLC	Delaware
Vivint Solar OTM Holdings, LLC	Delaware

Vivint Solar OTM I Manager, LLC	Delaware
Vivint Solar OTM I Lessor, LLC	Delaware
Vivint Solar Fund XVIII Manager, LLC	Delaware
Vivint Solar Fund XVIII Project Company, LLC	Delaware
Vivint Solar SREC Financing, LLC	Delaware
Vivint Solar SREC Aggregator, LLC	Delaware
Vivint Solar Fund XIX Manager, LLC	Delaware
Vivint Solar Fund XIX Project Company, LLC	Delaware
Vivint Solar Fund 20 Manager, LLC	Delaware
Vivint Solar Fund 20 Project Company, LLC	Delaware
Vivint Solar Fund 21 Manager, LLC	Delaware
Vivint Solar Fund 21 Project Company, LLC	Delaware
Vivint Solar Financing III Parent, LLC	Delaware
Vivint Solar Financing III, LLC	Delaware
Vivint Solar SREC Guarantor III, LLC	Delaware
Vivint Solar Fund 22 Manager, LLC	Delaware
Vivint Solar Fund 22 Project Company, LLC	Delaware
Vivint Solar Fund 23 Manager, LLC	Delaware
Vivint Solar Fund 23 Project Company, LLC	Delaware
Vivint Solar Fund 24 Manager, LLC	Delaware
Vivint Solar Fund 24 Project Company, LLC	Delaware
Vivint Solar Fund 25 Manager, LLC	Delaware
Vivint Solar Fund 25 Project Company, LLC	Delaware
Vivint Solar Fund 26 Manager, LLC	Delaware
Vivint Solar Fund 26 Project Company, LLC	Delaware
Vivint Solar Consumer Finance, LLC	Delaware
Vivint Solar Consumer Finance 1, LLC	Delaware
Vivint Solar Consumer Finance 1 Parent, LLC	Delaware
Vivint Solar Consumer Finance 1 Holdings, LLC	Delaware
Vivint Solar Consumer Finance 1 Holdings Parent, LLC	Delaware
Vivint Solar NYC Electrical, LLC	Delaware
Vivint Solar Financing IV, LLC	Delaware
Vivint Solar Financing IV Parent, LLC	Delaware
Vivint Solar Financing V, LLC	Delaware
Vivint Solar Financing V Parent, LLC	Delaware
Vivint Solar Asset 1 Class B, LLC	Delaware
Vivint Solar Asset 1 Manager, LLC	Delaware
Vivint Solar Asset 1 Owner, LLC	Delaware
Vivint Solar Asset 1 Project Company, LLC	Delaware
Vivint Solar Asset Holdings, LLC	Delaware
Vivint Solar Owner V, LLC	Delaware
Vivint Solar Owner V, Manager, LLC	Delaware
VS BC Solar Lessee I, LLC	Delaware

Consent of Independent Registered Public Accounting Firm

We consent to the incorporation by reference in the following Registration Statements:

- 1) Registration Statement (Form S-3 No. 333-227014) of Vivint Solar, Inc.,
- 2) Registration Statement (Form S-3 No. 333-219787) of Vivint Solar, Inc.,
- 3) Registration Statement (Form S-8 No. 333-216807) of Vivint Solar, Inc. pertaining to the 2014 Equity Incentive Plan,
- 4) Registration Statement (Form S-8 No. 333-199077) pertaining to the 2014 Equity Incentive Plan, 2013 Omnibus Incentive Plan and the Non-Plan Stock Option Agreement of Vivint Solar, Inc.;

of our report dated March 5, 2019, with respect to the consolidated financial statements of Vivint Solar, Inc. included in this Annual Report (Form 10-K) of Vivint Solar, Inc. for the year ended December 31, 2018.

/s/ Ernst & Young LLP

Salt Lake City, UT
March 5, 2019

**CERTIFICATION PURSUANT TO
RULES 13a-14(a) AND 15d-14(a) UNDER THE SECURITIES EXCHANGE ACT OF 1934,
AS ADOPTED PURSUANT TO SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002**

I, David Bywater, certify that:

- 1) I have reviewed this Annual Report on Form 10-K of Vivint 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: March 5, 2019

By: _____
/s/ David Bywater
David Bywater
Chief Executive Officer
(Principal Executive Officer)

**CERTIFICATION 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 Annual Report of Vivint Solar, Inc. (the "Company") on Form 10-K for the year ending December 31, 2018 as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I certify, pursuant to 18 U.S.C. § 1350, as adopted pursuant to § 906 of the Sarbanes-Oxley Act of 2002, that:

- (1) The Report fully complies with the requirements of section 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 result of operations of the Company.

Date: March 5, 2019

By: _____ /s/ David Bywater
David Bywater
Chief Executive Officer
(Principal Executive Officer)

**CERTIFICATION 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 Annual Report of Vivint Solar, Inc. (the "Company") on Form 10-K for the year ending December 31, 2018 as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I certify, pursuant to 18 U.S.C. § 1350, as adopted pursuant to § 906 of the Sarbanes-Oxley Act of 2002, that:

- (1) The Report fully complies with the requirements of section 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 result of operations of the Company.

Date: March 5, 2019

By: _____ /s/ Dana Russell
Dana Russell
Chief Financial Officer and Executive Vice President
(Principal Financial and Accounting Officer)