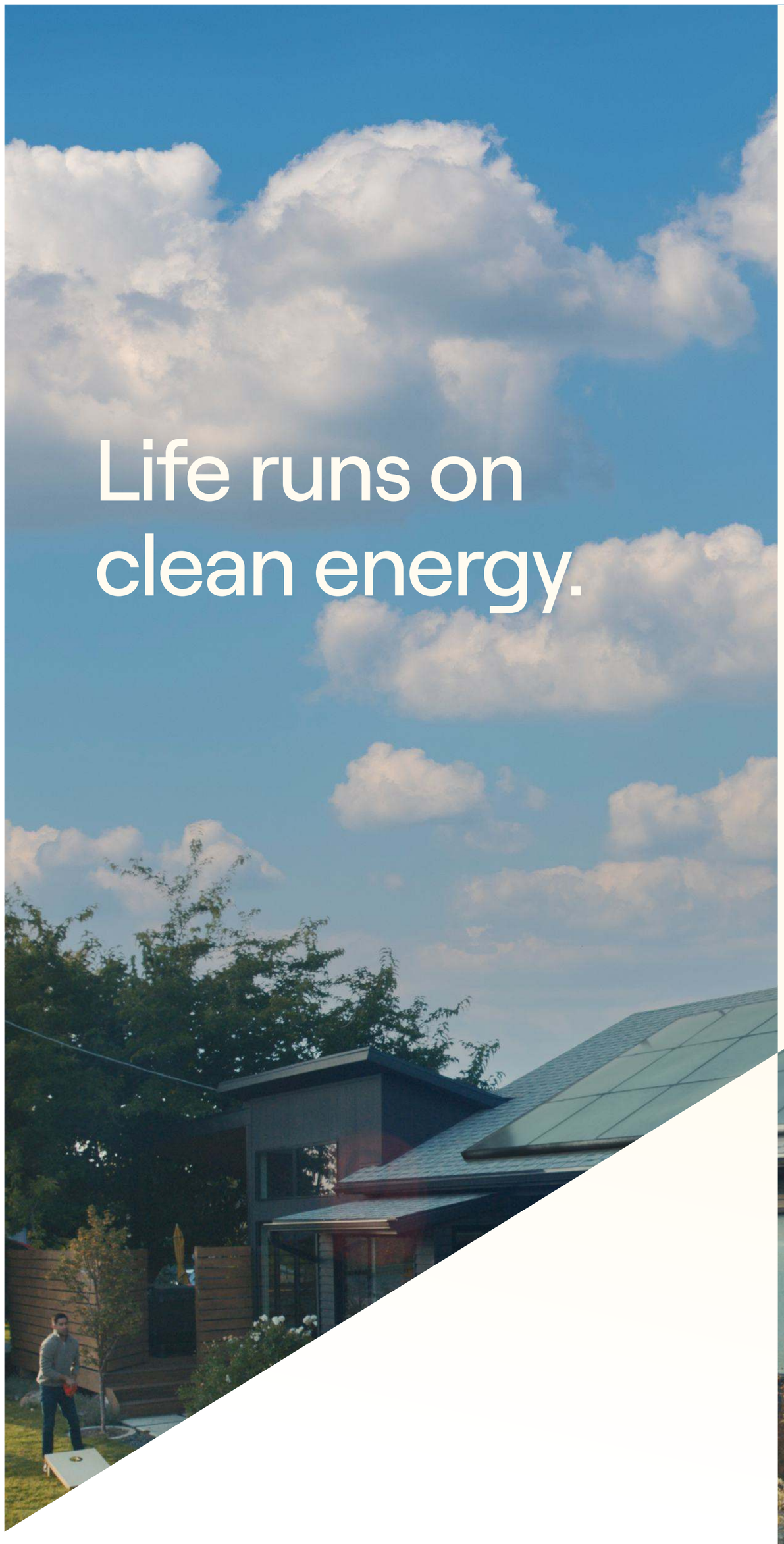
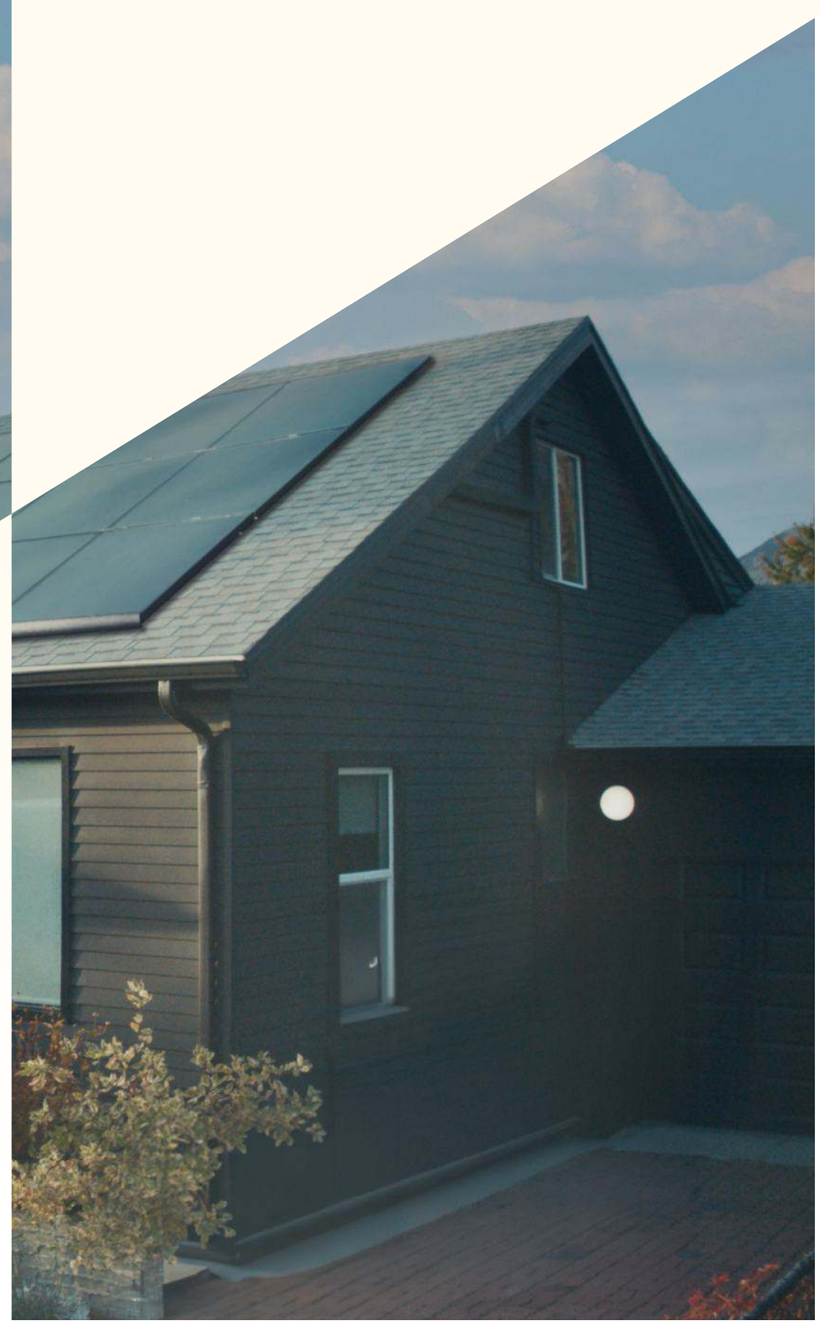
SUNRUN

2023 Annual Report

Life runs on clean energy.





Forward Looking Statements

This communication contains forward-looking statements related to Sunrun (the "Company") within the meaning of Section 27A of the Securities Act of 1933, and Section 21E of the Securities Exchange Act of 1934 and the Private Securities Litigation Reform Act of 1995. Such forward-looking statements include, but are not limited to, statements related to: the Company's financial and operating guidance and expectations; the Company's business plan, trajectory, expectations, market leadership, competitive advantages, operational and financial results and metrics (and the assumptions related to the calculation of such metrics); the Company's momentum in its business strategies including its ESG efforts, expectations regarding market share, total addressable market, customer value proposition, market penetration, financing activities, financing capacity, product mix, and ability to manage cash flow and liquidity; the growth of the solar industry; the Company's financing activities and expectations to refinance, amend, and/or extend any financing facilities; trends or potential trends within the solar industry, our business, customer base, and market; the Company's ability to derive value from the anticipated benefits of partnerships, new technologies, and pilot programs, including contract renewal and repowering programs; anticipated demand, market acceptance, and market adoption of the Company's offerings, including new products, services, and technologies; the Company's strategy to be a storage-first company; the ability to increase margins based on a shift in product focus; expectations regarding the growth of home electrification, electric vehicles, virtual power plants, and distributed energy resources; the Company's ability to manage suppliers, inventory, and workforce; supply chains and regulatory impacts affecting supply chains; the Company's leadership team and talent development; the legislative and regulatory environment of the solar industry and the potential impacts of proposed, amended, and newly adopted legislation and regulation on the solar industry and our business; the ongoing expectations regarding the Company's storage and energy services businesses and anticipated emissions reductions due to utilization of the Company's solar energy systems; and factors outside of the Company's control such as macroeconomic trends, bank failures, public health emergencies, natural disasters, acts of war, terrorism, geopolitical conflict, or armed conflict / invasion, and the impacts of climate change. These statements are not guarantees of future performance; they reflect the Company's current views with respect to future events and are based on assumptions and estimates and are subject to known and unknown risks, uncertainties and other factors that may cause actual results, performance or achievements to be materially different from expectations or results projected or implied by forward-looking statements. The risks and uncertainties that could cause the Company's results to differ materially from those expressed or implied by such forward-looking statements include: the Company's continued ability to manage costs and compete effectively; the availability of additional financing on acceptable terms; worldwide economic conditions, including slow or negative growth rates and inflation; volatile or rising interest rates; changes in policies and regulations, including net metering, interconnection limits, and fixed fees, or caps and licensing restrictions and the impact of these changes on the solar industry and our business; the Company's ability to attract and retain the Company's business partners; supply chain risks and associated costs; realizing the anticipated benefits of past or future investments, partnerships, strategic transactions, or acquisitions, and integrating those acquisitions; the Company's leadership team and ability to attract and retain key employees; changes in the retail prices of traditional utility generated electricity; the availability of rebates, tax credits and other incentives; the availability of solar panels, batteries, and other components and raw materials; the Company's business plan and the Company's ability to effectively manage the Company's growth and labor constraints; the Company's ability to meet the covenants in the Company's investment funds and debt facilities; factors impacting the home electrification and solar industry generally, and such other risks and uncertainties identified in the reports that we file with the U.S. Securities and Exchange Commission from time to time. All forward-looking statements used herein are based on information available to us as of the date hereof, and we assume no obligation to update publicly these forward-looking statements for any reason, except as required by law.

SUNRUN

2023 Annual Letter
To Stockholders

April 26, 2024

Dear Stockholder,

2023 was a pivotal year for Sunrun as we accelerated the pace of innovation, quickly adapted to regulatory changes in our largest market with the best pro-consumer storage and solar offerings and remained responsive to macroeconomic factors, including higher interest rates, as we executed on our disciplined, margin-focused strategy. Our focus is on delivering meaningful Cash Generation for our stockholders as we continue to respond to the complex set of challenges facing the industry.

AT THE FOREFRONT OF A CUSTOMER-LED REVOLUTION IN ENERGY

Sunrun is at the forefront of the customer-led revolution in energy. We are making affordable and reliable energy accessible to families across America with the most pro-consumer offerings and delivering the best customer experience and service in the industry. Being the chosen, trusted provider to deliver this clean energy future is critical.

We are operating at a large scale as we lead the industry. In 2023, we added nearly 136,000 Customers, with 84% selecting our subscription offering, which provides energy to our customers under long-term agreements, typically without any upfront costs and with immediate savings compared to the cost of energy from traditional providers. We continued to grow our customer base, exiting 2023 with over 933,000 Customers, representing 6.7 gigawatts of Networked Solar Capacity.

Our growth opportunity is tremendous, as only 5% of households across America have made the transition to clean, affordable, locally-produced energy. The fundamental demand drivers of our business continue to be robust. Utility rates continue to rise due to the stress and strain of climatic events on the grid and massive utility capital expenditures. Solar and storage equipment costs have declined significantly over the past year, while our installation labor productivity continues to improve. Most importantly, customers remain eager for clean, affordable, and resilient energy to power their lives.

WE ARE RAPIDLY TRANSITIONING TO A STORAGE-FIRST COMPANY

During 2023, we reshaped the business to be storage-first. Throughout the year, we rapidly accelerated storage adoption, and as a result, we are growing our lead as America's clean energy company, one that delivers a superior value proposition to customers and creates multiple value streams for our stockholders. This requires a significant national change management effort, one that most competitors have not yet undertaken.

We started 2023 by installing storage systems at approximately 15% of new customers' homes, and by the end of 2023, we increased our storage attachment rate to over 45% of new customers. This transition has enabled Sunrun to adapt to the new regulatory structures in California and other markets while also providing customers with superior value by offering energy resilience and control. By the end of 2023, Sunrun installed more than 90,000 solar and storage systems, representing over 1.3 gigawatt hours of Networked Storage Capacity.

This growing fleet of solar and storage systems can be used to provide valuable energy resources to utilities and grid operators to reduce the strain on the energy system during times of peak demand, when energy supply is tightest. During 2023, we demonstrated the power of what we can provide in a program with PG&E, launching the largest residential virtual power plant of its kind in the United States. The program provided consistent, reliable capacity to support the grid by dispatching every day during peak times from August through October, with more than 8,500 customers participating. The program "Peak Power Rewards" with PG&E provided 30 megawatts to the grid. Sunrun earned incremental revenue streams while customers also received a financial incentive for their participation. As our base of valuable energy resources increases, we expect more utilities, their regulators, and grid operators to look to our networked fleet of solar and storage systems as a valuable resource to meet the growing demands of the grid.

SUNRUN

2023 Annual Letter
To Stockholders

PRIORITIZING SUSTAINABLE, PROFITABLE GROWTH AS WE REMAIN FOCUSED ON DELIVERING MEANINGFUL CASH GENERATION

In 2023, we remained focused on executing our margin-focused growth strategy. We responded to higher interest rates with continued go-to-market optimization, remaining disciplined in how we participate in the Affiliate Partner segment of the market, and focusing on our leadership in storage products. These actions were, and will continue to be, fundamentally geared towards maximizing value creation for our stockholders.

Our focus on Cash Generation, price discipline, and leading with a customer-centric mindset are prudent actions to take as we position the company to maximize long-term value as a storage-first company. These actions, coupled with continued cost reductions, will maximize long-term value creation and position us for meaningful Cash Generation.

WE ARE FOCUSED ON ENHANCING CUSTOMER VALUE AND FORGING VALUABLE LONG-TERM RELATIONSHIPS

This year, we launched and expanded partnerships that enhance our service offerings and extend our reach. Initiatives such as our early renewal pilot, battery retrofit and standalone storage, and new retail partnerships have opened new avenues for growth.

OUR TEAM: THE DRIVER OF OUR SUCCESS

The achievements of the past year are a testament to the talent, dedication, and hard work of the Sunrun team. I want to celebrate our teams across the country, in the field and offices, who are helping accelerate this customer-led revolution in energy and practicing our strong culture of doing it safely and efficiently. I am so thankful for the contributions from each and every Sunrunner who is helping drive this transformation.

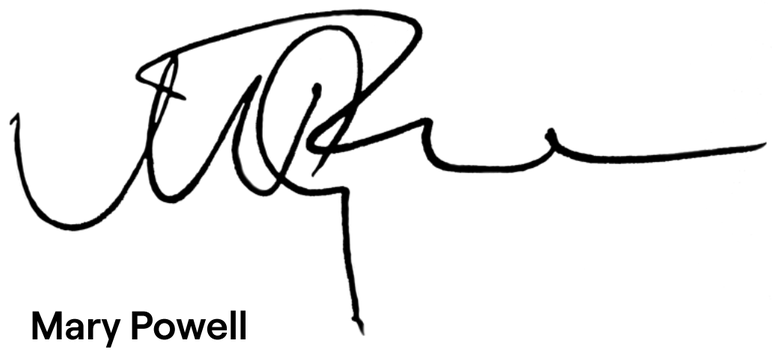
CONCLUDING COMMENTS

We are at the forefront of a customer-led revolution to make clean, affordable, and reliable energy accessible to more families across America. We are at the beginning of a massive transition towards electrification, driving more electricity use at the home, and can offer an affordable, reliable source of clean energy for millions of households.

I am confident we will continue to capitalize on market shifts and strengthen our position by remaining customer-focused and long-term-oriented. I believe our margin-focused strategy and Cash Generation objectives will maximize the value we can create for stockholders and the positive impact we can make long-term in our communities and for our customers.

Your continued support and investment in Sunrun fuel our journey towards a brighter, cleaner future.

Thank you for your continued investment in Sunrun.



Mary Powell
CEO

SUNRUN

2023 Annual Report

SUNRUN'S IMPACT 2023

Over

930,000 Customers

1.3 gigawatt hours

Networked Storage Capacity, providing at-scale distributed power plant capabilities

6.7 gigawatts

Cumulative amount of Networked Solar Energy Capacity deployed since 2007, making Sunrun one of the largest solar companies in the world

$1.34 billion

in Annual Recurring Revenue with Average Contract Life Remaining of 17.8 years

$5 billion

in Net Earning Assets

+

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, 2023

OR

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

Commission File Number 001-37511

Sunrun Inc.

(Exact name of Registrant as specified in its Charter)

Delaware	**26-2841711**
(State or other jurisdiction of incorporation or organization)	**(I.R.S. Employer Identification No.)**

225 Bush Street, Suite 1400

San Francisco, California 94104

(Address of principal executive offices and Zip Code)

(415) 580-6900

(Registrant's telephone number, including area code)

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

Title of each class	Trading Symbol(s)	Name of each exchange on which registered
Common Stock, $0.0001 par value per share	RUN	Nasdaq Global Select Market

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 Section 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 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	☐ (Do not check if a smaller reporting company)	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 has filed a report on and attestation to its management's assessment of the effectiveness of its internal control over financial reporting under Section 404(b) of the Sarbanes-Oxley Act (15 U.S.C. 7262(b)) by the registered public accounting firm that prepared or issued its audit report. ☒

If securities are registered pursuant to Section 12(b) of the Act, indicate by check mark whether the financial statements of the registrant included in the filing reflect the correction of an error to previously issued financial statements. ☐

Indicate by check mark whether any of those error corrections are restatements that required a recovery analysis of incentive-based compensation received by any of the registrant's executive officers during the relevant recovery period pursuant to §240.10D-1(b). ☐

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

The aggregate market value of the voting and non-voting common equity held by non-affiliates of the Registrant, based on the closing price of the shares of common stock on The Nasdaq Stock Market on June 30, 2023 was approximately $3.8 billion.

As of February 16, 2024, the number of shares of the registrant's common stock outstanding was 219,590,062.

Portions of the information called for by Part III of this Form 10-K are hereby incorporated by reference from the definitive Proxy Statements for our annual meeting of stockholders, which will be filed with the Securities and Exchange Commission not later than 120 days after December 31, 2023.

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SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

The discussion in this Annual Report on Form 10-K contains forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended (the "Securities Act"), Section 21E of the Securities Exchange Act of 1934, as amended (the “Exchange Act”) and the Private Securities Litigation Reform Act of 1995, which statements involve substantial risks and uncertainties. Forward-looking statements generally relate to future events or our future financial or operating performance. In some cases, you can identify forward-looking statements because they contain words such as “may,” “will,” “should,” “expects,” “plans,” “goals,” “anticipates,” “could,” “intends,” “target,” “projects,” “contemplates,” “believes,” “estimates,” “predicts,” “potential,” “continue,” “likely,” or the negative of these words or other similar terms or expressions that concern our expectations, strategy, plans or intentions. Forward-looking statements contained in this Annual Report on Form 10-K include, but are not limited to, statements about:

- the potential impact of regulatory and policy development and changes;
- the availability of rebates, tax credits and other financial incentives, and decreases to federal solar tax credits;
- the potential impact of volatile or rising interest rates on our interest expense;
- our industry’s, and specifically our, continued ability to manage costs (including, but not limited to, equipment costs) associated with solar service offerings;
- potential changes in the retail price of utility-generated electricity or electricity from other energy sources;
- the sufficiency of our cash, investment fund commitments and available borrowings to meet our anticipated cash needs;
- our need and ability to raise capital, refinance existing debt, and finance our operations and solar energy systems from new and existing investors;
- our investment in research and development and new product offerings;
- determinations by the Internal Revenue Service (“IRS”) of the creditable basis of our solar energy systems;
- our ability to manage our supply chains and distribution channels and the impact of natural disasters, geopolitical conflicts, any lingering effects of the COVID-19 pandemic, and other events beyond our control;
- our business plan and our ability to effectively manage our growth, including our rate of revenue growth;
- our ability to further penetrate existing markets, expand into new markets and our expectations regarding market growth (including, but not limited to, expected cancellation rates);
- our expectations concerning relationships with third parties, including the attraction, retention and continued existence of qualified solar partners;
- the impact of seasonality on our business;
- our strategic partnerships and investments and the expected benefits of such partnerships and investments;

- supply chain disruptions, inflation, tariffs and trade barriers, export regulations, bank failures, geopolitical conflicts and other macroeconomic conditions on our business and operations, results of operations and financial position;

- our ability to realize the anticipated benefits of past or future investments, strategic transactions, or acquisitions, and risk that the integration of these acquisitions may disrupt our business and management;

- our ability to protect our intellectual property and customer data, as well as to maintain our brand;

- the willingness of and ability of our solar partners to fulfill their respective warranty and other contractual obligations;

- our ability to renew or replace expiring, canceled or terminated Customer Agreements at favorable rates or on a long-term basis;

- the ability of our solar energy systems to operate or deliver energy for any reason, including if interconnection or transmission facilities on which we rely become unavailable;

- our expectations regarding certain performance objectives and the renewal rates and purchase value of our solar energy systems after expiration of our Customer Agreements;

- the calculation of certain of our key financial and operating metrics and accounting policies; and

- our ability to capitalize on the market opportunities created by the electrification of the U.S. economy with renewable energy.

These forward-looking statements are subject to a number of risks, uncertainties and assumptions, including those described in the section titled “Risk Factors” and elsewhere in this Annual Report on Form 10-K. Moreover, we operate in a very competitive and rapidly changing environment, and new risks emerge from time to time. It is not possible for our management to predict all risks, nor can we assess the impact of all factors on our business or the extent to which any factor, or combination of factors, may cause actual results to differ materially from those contained in any forward-looking statements we may make. These risks and uncertainties may be amplified by evolving economic and regulatory conditions, including increasing or volatile interest rates. The extent to which these risks and uncertainties impact our business, operations, and financial results, including the duration and magnitude of such effects, will depend on numerous factors, including, but not limited to, the duration, rapidity, and intensity of these conditions, how widespread their impact is and will continue to be on our industry, and how quickly and to what extent more predictable and stable economic conditions resume. In light of these risks, uncertainties and assumptions, the forward-looking events and circumstances discussed in this Annual Report on Form 10-K may not occur and actual results could differ materially and adversely from those anticipated or implied in the forward-looking statements.

You should not rely upon forward-looking statements as predictions of future events. Although we believe that the expectations reflected in the forward-looking statements are reasonable, we cannot guarantee that the future results, levels of activity, performance or events and circumstances reflected in the forward-looking statements will be achieved or occur. Moreover, neither we nor any other person assumes responsibility for the accuracy and completeness of the forward-looking statements. We undertake no obligation to update publicly any forward-looking statements for any reason after the date of this Annual Report on Form 10-K to conform these statements to actual results or to changes in our expectations, except as required by law.

You should read this Annual Report on Form 10-K and the documents that we reference in this Annual Report on Form 10-K and have filed with the Securities and Exchange Commission (the “SEC”) as exhibits to this Annual Report on Form 10-K with the understanding that our actual future results, levels of activity, performance, and events and circumstances may be materially different from what we expect.

SELECTED RISKS AFFECTING OUR BUSINESS

Investing in our common stock involves numerous risks, including the risks described in "Part I, Item 1A. Risk Factors", of this Annual Report on Form 10-K. Below are some of these risks, any one of which could materially adversely affect our business, financial condition, results of operations and prospects.

Selected Risks Related to the Solar Industry

- The solar energy industry is an emerging market which is constantly evolving and may not develop to the size or at the rate we expect.
- We have historically benefited from declining costs in our industry, and our business and financial results may be harmed as a result of recent and any continued increases in costs associated with our solar service offerings and any failure of these costs to continue declining as we currently expect. If we do not reduce our cost structure in the future, our ability to continue to be profitable may be impaired.
- We face competition from traditional energy companies as well as solar and other renewable energy companies.

Selected Risks Related to Our Operating Structure and Financing Activities

- We need to raise capital to finance the continued growth of our operations and solar service business. If capital is not available to us on acceptable terms, as and when needed, our business and prospects would be materially and adversely impacted. In addition, our business is affected by general economic conditions and related uncertainties affecting markets in which we operate. Volatility in current economic conditions could adversely impact our business, including our ability to raise financing.
- Volatility and increases in interest rates raise our cost of capital and may adversely impact our business.
- We expect to incur substantially more debt in the future, which could intensify the risks to our business.

Selected Risks Related to Regulation and Policy

- The customer value proposition for distributed solar, storage, and home electrification products is influenced by a number of factors, including, but not limited to, the retail price of electricity, the valuation of electricity not consumed on site and exported to the grid, the rate design mechanisms of customers' utility bills, various policies related to the permitting and interconnection costs of our products to homes and the grid, the availability of incentives for solar, batteries, and other electrification products, and other policies which allow aggregations of our systems to provide the grid value. Significant changes to any of these factors may impact the competitiveness of our service offerings to customers.
- Electric utility statutes and regulations and changes to such statutes or regulations may present technical, regulatory and economic barriers to the purchase and use of our solar service offerings that may significantly reduce demand for such offerings.
- Regulations and policies related to rate design could deter potential customers from purchasing our solar service offerings, reduce the value of the electricity our systems produce, and reduce any savings that our customers could realize from our solar service offerings.

Selected Risks Related to Our Business Operations

- Our growth depends in part on the success of our relationships with third parties, including our solar partners.
- We and our solar partners depend on a limited number of suppliers of solar panels, batteries, and other system components to adequately meet anticipated demand for our solar service offerings. Any shortage, bottlenecks, delay, detentions, or component price change from these suppliers, or the acquisition of any of these suppliers by a competitor, could result in sales and installation delays, cancellations and loss of market share.

- If we fail to manage our recent and future growth effectively, we may be unable to execute our business plan, maintain high levels of customer service, or adequately address competitive challenges.
- We may not realize the anticipated benefits of past or future investments, strategic transactions, or acquisitions, and integration of these acquisitions may disrupt our business and our management.
- A failure to hire and retain a sufficient number of employees and service providers in key functions would constrain our growth and our ability to timely complete customers' Projects and successfully manage customer accounts.
- Regulators may impose rules on the type of electricians qualified to install and service our solar and battery systems in California, which may result in workforce shortages, operational delays, and increased costs.
- Our results of operations may fluctuate from quarter to quarter, which could make our future performance difficult to predict and could cause our results of operations for a particular period to fall below expectations, resulting in a decline in the price of our common stock.
- Our actual financial results may differ materially from any guidance we may publish from time to time.
- Failure or perceived failure to comply with existing or future laws, regulations, contracts, self-regulatory schemes, standards, and other obligations related to data privacy and security (including security incidents) could harm our business. Compliance or the actual or perceived failure to comply with such obligations could increase the costs of our products/services, limit their use or adoption, and otherwise negatively affect our operating results and business.

Selected Risks Related to Taxes and Accounting

- Our ability to provide our solar service offerings to customers on an economically viable basis depends in part on our ability to finance these systems with fund investors who seek particular tax and other benefits.
- If the IRS makes determinations that the creditable basis of our solar energy systems is materially lower than what we have claimed, we may have to pay significant amounts to our fund investors, and our business, financial condition, and prospects may be materially and adversely affected.
- Our business currently depends on the availability of utility rebates, tax credits and other benefits, tax exemptions and exclusions, and other financial incentives, on the federal, state, and/or local levels. We may be adversely affected by changes in, and application of, these laws or other incentives to us, and the expiration, elimination or reduction of these benefits could adversely impact our business.

If we are unable to adequately address these and other risks we face, our business may be harmed.

PART I

Item 1. Business.

Overview

Sunrun's (the “Company,” “our,” “we”) mission is to connect people to the cleanest energy on earth. Sunrun transformed the solar industry in 2007 by removing financial barriers and democratizing access to locally-generated, renewable energy. Today, Sunrun is the nation’s leading provider of clean energy as a subscription service, offering residential solar and storage with no upfront costs. Sunrun’s innovative products and solutions can connect homes to the cleanest energy on earth, providing them with energy security, predictability, and peace of mind. Sunrun also manages energy services that benefit communities, utilities, and the electric grid while enhancing customer value.

We are engaged in the design, development, installation, sale, ownership and maintenance of residential solar energy systems (“Projects”) in the United States. We provide clean, solar energy typically at savings compared to traditional utility energy. Our primary customers are residential homeowners. We also offer battery storage along with solar energy systems to our customers in select markets and sell our services to certain commercial developers through our multi-family and new homes offerings. After inventing the residential solar service model and recognizing its enormous market potential, we have built the infrastructure and capabilities necessary to rapidly acquire and serve customers in a low-cost and scalable manner. Today, our scalable operating platform provides us with a number of unique advantages. First, we are able to drive distribution by marketing our solar service offerings through multiple channels, including our diverse partner network and direct-to-consumer operations. This multi-channel model supports broad sales and installation capabilities, which together allow us to achieve capital-efficient growth. Second, we are able to provide differentiated solutions to our customers that, combined with a great customer experience, we believe will drive meaningful margin advantages for us over the long term as we strive to create the industry’s most valuable and satisfied customer base.

Our core solar service offerings are provided through our lease and power purchase agreements, which we refer to as our “Customer Agreements,” and which provide customers with simple, predictable pricing for solar energy that is insulated from rising retail electricity prices. They also provide customers who opt for storage offerings the benefit of increased resiliency from backup energy and enhanced energy management capabilities. While customers have the option to purchase a solar energy system outright from us, most of our customers choose to buy solar as a service from us through our Customer Agreements without the significant upfront investment of purchasing a solar energy system. With our solar service offerings, we install solar energy systems on our customers’ homes and provide them with the solar power produced by those systems for typically a 20- or 25-year initial term. In addition, we monitor, maintain and insure the system during the term of the contract. In exchange, we receive predictable cash flows from high credit quality customers and qualify for tax and other benefits. We finance portions of these tax benefits and cash flows through tax equity, non-recourse debt and project equity structures in order to fund our upfront costs, overhead and growth investments. We develop valuable customer relationships that can extend beyond this initial contract term and provide us an opportunity over time to integrate additional solar, battery storage, electrification and distributed power plant offerings into a smart solution for each home and community. Since our founding, we have continued to invest in a platform of services and tools to enable large scale operations for us and our partner network, and these partners include solar integrators, sales partners, installation partners and other strategic partners. The platform includes processes and software, as well as fulfillment and acquisition of marketing leads. We believe our platform empowers new market entrants and smaller industry participants to profitably serve our large and underpenetrated market without making the significant investments in technology and infrastructure required to compete effectively against established industry players. Our platform provides the support for our multi-channel model, which drives broad customer reach and capital-efficient growth.

Delivering a differentiated customer experience is core to our strategy. We emphasize a customized solution, including a design specific to each customer’s home and pricing configurations that typically drive both customer savings and value to us. We believe that our passion for engaging our customers, developing a trusted brand, and providing a customized solar service offering resonates with our customers who are accustomed to a traditional residential power market that is often overpriced and lacking in customer choice.

We have experienced substantial growth in our business and operations since our inception in 2007, as well as through our acquisition of Vivint Solar on October 8, 2020. As of December 31, 2023, we operated the largest fleet of residential solar energy systems in the United States. We have a Networked Solar Energy Capacity of 6,689 megawatts as of December 31, 2023, which represents the aggregate megawatt production capacity of our solar energy systems that have been recognized as deployments, from our inception through the measurement date. Our Gross Earning Assets as of December 31, 2023 were approximately $14.2 billion. Please see the section entitled "Management's Discussion and Analysis of Financial Condition and Results of Operations — Key Operating Metrics" for more details on how we calculate Networked Solar Energy Capacity and Gross Earning Assets.

We also have a long track record of attracting low-cost capital from diverse sources, including tax equity and debt investors. Since inception we have raised tax equity investment funds to finance the installation of solar energy systems.

Our Multi-Channel Capabilities

Our unique, multi-channel capabilities offer consumers a compelling solar service through scalable, cost-effective and consumer-friendly channels. Customers can access our products through three channels: direct-to-consumer, solar partnerships and strategic partnerships.

Direct-to-Consumer

We sell solar service offerings and install solar energy systems for customers through our direct-to-consumer channel. These solar energy systems are offered to customers either under a Customer Agreement or for purchase. This channel consists of an online lead generation function, a telesales and field sales team, a direct-to-home sales force, a retail sales team and an industry-leading installation organization.

Solar Partnerships

We contract with diverse solar organizations that act as either exclusive or non-exclusive (depending on the terms of their contract with us) distributors of our solar service offerings and subcontractors for the installation of the related solar energy systems. Because of our commitment to these solar organizations and our vested interest in their success, we refer to them as our "solar partners," although the actual legal relationship is that of an independent contractor. Our solar partners include:

- Solar integrators: trained and trusted partners who originate customers for our solar service offerings and procure and install the solar energy systems on our customers' homes on our behalf as our subcontractors. Partnerships with solar integrators allow us to expand our brand, quickly enter new markets and drive capital-efficient growth. We compensate our solar integrators on a per solar energy system basis for generating Customer Agreements and the installation work they perform for us.
- Sales partners: sales and lead generation partners who provide us with high-quality leads and customers at competitive prices. We typically compensate our sales partners on a per customer basis for the sales and lead generation services they perform for us. All contracts are between the customer and us, based on a price set by us.
- Installation partners: trusted installation partners who procure and install a subset of our solar energy systems as our subcontractors and allow us to deploy a mix of in-house and outsourced installation capabilities more efficiently. We compensate our installation partners on a per solar energy system basis for the procurement of materials and installation work they perform for us. Installation partners are solely our subcontractors and do not enter into any agreements with our customers.

Our ability to connect specialized sales and installation firms on a single platform, which we license to our solar partners at no cost, allows us to enjoy the benefits of vertical integration without the additional fixed cost structure. This creates margin opportunities, system efficiencies and benefits from network effects in matching these ecosystem participants.

Strategic Partnerships

Our strategic partnerships encompass relationships with new market entrants not previously engaged in solar, including consumer marketing, retail and specialized energy retail companies. Our strategic partners find the residential solar market attractive, but recognize that significant barriers to entry make partnerships the preferred method to reach solar customers. Through these strategic arrangements, we typically market our solar service offerings to the strategic partner's customer base and install the solar energy systems directly or through one of our solar partners. We manage the customer experience and retain the value of the economic relationship through the term of the customer's contract and potential renewal period. We have executed strategic partnerships in competitive processes that give us access to millions of potential customers. As our industry grows, we believe that our unique platform and deep partnership experience position us to be the partner of choice for new market entrants. We believe that these broad strategic relationships will help us drive down our customer acquisition costs and make solar accessible to even more customers.

The combination of direct-to-consumer, solar partnerships and strategic partnerships offers distinct advantages. The direct-to-consumer channel allows us to scale rapidly, drive incremental unit costs down over the long term, and refine operational processes to share with our partners. Our solar partnerships and strategic partnerships enable nimble market entry and exit, while allowing for capital efficient growth. Together, this multi-channel strategy supported by our open platform allows us to reach more customers with our leading solar service offerings without compromising our ability to provide exceptional customer service.

Customer Agreements

Since we were founded in 2007, we have been providing solar energy to residential customers at prices typically below utility rates through a variety of offerings, most commonly through our leases and power purchase agreements which we refer to as our Customer Agreements. Under our Customer Agreements, customers have the right to use and consume all electricity produced by the solar energy system on a continuous basis or, for customers who also opted for our battery storage offerings, stored in batteries which can be discharged as needed. Most Customer Agreements, other than those billed based on generation, entitle the customer to a refund for underproduction below a guaranteed amount, which we refer to as our "performance guarantee." Either directly or through a solar partner, we construct a solar energy system on a customer's home which generates electricity at set prices through Customer Agreements which typically have an initial term of 20 or 25 years. Rates for both forms of our Customer Agreements can be fixed for the duration of the contract or escalated at a pre-determined percentage annually. Upon installation, a system is interconnected to the local utility grid. The home's energy usage is provided by the solar energy system with any additional energy needs provided by the local utility. Any excess solar energy that is not immediately used by our customers or stored in batteries is exported to the utility grid using a bi-directional utility net meter, and in states with net metering, customers generally receive a credit for this excess power from their utility to offset future usage of utility-generated energy.

Although many of our customers choose to pay little-to-nothing upfront and instead receive a monthly bill, some customers choose to prepay an amount upfront, thereby reducing their monthly bill. The amount of an upfront payment is customized for each customer. Customers may also choose to fully prepay their 20- or 25-year contracts. The prepayment amount is based on the estimated amount of the solar energy system's output over the typically 20- or 25-year term of the Customer Agreement. If the estimated production of the solar energy system is less than the actual production for a given year after the first full one to two years of the agreement, prepaid customers are refunded the difference at the end of each such year. If the solar energy system's energy production is in excess of the estimate, we allow customers to keep the excess energy at no charge. After the initial term of the Customer Agreement, customers have the option to renew their contracts for the remaining life of the solar energy system, typically at a 10% discount to then-prevailing power prices, to purchase the system from us at its fair market value, or have us remove the system.

Regardless of the type of Customer Agreement our customers choose, we operate the system and agree to monitor it at no cost to the customer. System maintenance is included in our power purchase agreement ("PPA") or lease. We offer an industry-leading performance guarantee to ensure that our customers are receiving the energy they expect at the price they expect. Our customers also receive up to a ten-year warranty for roof penetrations.

If a customer sells his or her home, the customer has the right to purchase the system or assign the Customer Agreement to the new homeowner, provided the new homeowner meets our credit requirements and agrees to be bound by the terms and conditions of the Customer Agreement. In connection with this service transfer, the customer may prepay all or a portion of the remaining payments due under the Customer Agreement to lower or eliminate the monthly rate to be paid by the new homeowner. If the customer fails to purchase the system or assign the Customer Agreement to a new homeowner, we may negotiate directly with the new homeowner to transfer the Customer Agreement (at times on modified terms) and/or look to the original customer to pay all remaining payments due. We have completed thousands of service transfers and, from inception through December 31, 2023, the aggregate expected net present value of the Customer Agreements once assigned represented approximately 100% of what it was prior to assignment.

Sales and Marketing

We sell our solar energy offerings through a scalable sales organization using both a direct-to-consumer approach across online, retail, mass media, digital media, canvassing, field marketing and referral channels as well as our diverse partner network. We sell to customers over the phone, online, in the field through canvassing and in-home sales and through our strategic retail sales partnerships. We also partner with sales-only organizations that focus on direct-to-consumer marketing and sales on our behalf, typically with a Sunrun-branded offering at point of sale, which further increases our brand and reach. 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. We believe that a customized, customer-focused selling process is important before, during and after the sale of our solar services to maximize our sales success and customer experience.

We train our sales team to customize their consultative presentation to the individual customer based on guidelines and principles outlined in our training materials. We are able to provide our sales team with real-time data and pricing tools through our proprietary technology which is designed to generate a tailored product offering with optimized pricing based on the actual characteristics of a customer's home, including roof characteristics and shading, as well as actual energy usage. This allows our sales team to differentially price homes in the same geographic region quickly and effectively.

Supply Chain

We purchase equipment, including solar panels, inverters and batteries from a limited number of manufacturers and suppliers. If we fail to maintain or expand our relationships with these suppliers and manufacturers, or if one or more that we rely upon to meet anticipated demand reduces or ceases production, it may be difficult to quickly identify and qualify alternatives on acceptable terms. In addition, equipment prices may increase in the coming years, or not decrease at the rates we historically have experienced, due to tariffs or other factors. As discussed in Item 1A. Risk Factors "*We have historically benefited from declining costs in our industry, and our business and financial results may be harmed as a result of recent and any continued increases in costs associated with our solar service offerings and any failure of these costs to continue declining as we currently expect. If we do not reduce our cost structure in the future, our ability to continue to be profitable may be impaired."* Section 201 tariffs on solar modules were imposed beginning in 2018 and were extended through 2026.

In addition, federal agencies and Congress are increasing enforcement against the importation of products suspected of being manufactured with forced labor. U.S. customs enforcement and the implementation of a new federal law could negatively impact our supply chain and the availability of products that we use to conduct our business. See "Risks Related to the Solar Industry" below for more information.

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), the backup power capabilities of our battery storage solution, and the ease by which customers can switch to 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, solar companies with business models that are similar to ours, and other renewable energy companies. Some customers might choose to subscribe to a community solar project or renewable subscriber program with these companies or their utilities, instead of installing a solar energy system on their home, which could affect our sales. Additionally, some utilities offer generation portfolios that are increasingly renewable in nature. We believe that we compete favorably with these companies based on our unique multi-channel approach and differentiated customer experience.

We also 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, to large construction companies and utilities and sophisticated electrical and roofing companies.

Intellectual Property

As of December 31, 2023, we had 54 issued patents and 16 filed patent applications in the United States relating to a variety of aspects of our solar solutions. Our issued U.S. patents will expire 20 years from their respective filing dates, with the earliest expiring in 2029. We intend to file additional patent applications as we continue to innovate through our research and development efforts.

Government Regulation

Although we are not regulated as a public utility in the United States under applicable national, state or other local regulatory regimes where we conduct business, we compete primarily with regulated utilities. As a result, we have developed and are committed to maintaining a policy team to focus on the key regulatory and legislative issues impacting the entire industry. We believe these efforts help us better navigate local markets through relationships with key stakeholders and facilitate a deep understanding of the national and regional policy environment.

To operate our systems, we obtain interconnection permission from the applicable local primary electric utility. Depending on the size of the solar energy system and local law requirements, interconnection permission is provided by the local utility directly to us and/or our customers. In almost all cases, interconnection permissions are issued on the basis of a standard process that has been pre-approved by the local public utility commission or other regulatory body with jurisdiction over net metering policies. As such, no additional regulatory approvals are required once interconnection permission is given.

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. For example, we are subject to the requirements of the federal Occupational Safety and Health Act, as amended (“OSHA”), the U.S. Department of Transportation (“DOT”), and comparable state laws that protect and regulate employee health and safety. We endeavor to maintain compliance with applicable DOT, OSHA and other comparable government regulations. However, we have in the past experienced workplace accidents and received citations from regulators resulting in fines, as discussed in Item 1A. *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 penalties, operational delays and adverse publicity.”* These incidents have not had a material impact on our business or our relations with our employees.

In Puerto Rico, we are subject to regulation as an electric power company by the Puerto Rico Energy Bureau and are required to comply with certain filing, certification, reporting and annual fee requirements. Regulation by the Puerto Rico Energy Bureau as an electric power company does not currently subject us to centralized utility-like regulation and currently we do not need the Puerto Rico Energy Bureau's approval of charges to customers.

Government Incentives

Federal, state and local government bodies provide incentives to owners, distributors, system integrators and manufacturers of solar energy systems to promote solar energy in the form of rebates, tax credits, payments for renewable energy credits associated with renewable energy generation and exclusion of solar energy systems from property tax assessments. These incentives enable us to lower the price we charge customers for energy from, and to lease, our solar energy systems, helping to catalyze customer adoption of solar energy as an alternative to utility-provided power. In addition, for some investors, 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. The federal government also currently offers an investment tax credit ("Commercial ITC") under Section 48(a) of the Internal Revenue Code of 1986, as amended (the "Code"), for the installation of certain energy properties, including solar power facilities owned for business purposes.

The Inflation Reduction Act of 2022 (the "IRA") was signed into law by President Biden on August 16, 2022, and some of its notable provisions include:

- the eligibility of solar facilities placed in service in 2022 (regardless of when construction began) and prior to January 1, 2025 for a 30% Commercial ITC under Section 48(a) of the Code (assuming apprenticeship and prevailing wage requirements are met; these requirements are deemed met for projects less than 1 MW), with standalone storage beginning in 2023;

- in the absence of meeting apprenticeship and prevailing wage requirements, the "base" amount of the Commercial ITC is 6% for facilities beginning construction prior to January 1, 2025 and 2% thereafter (however, as indicated above, the majority of our business qualifies for 30% credits upon which "bonus credits" could increase the total credit amount up to 70% in certain circumstances);

- the eligibility of solar and storage facilities placed in service after 2024 and through at least 2032 for a 30% technology-neutral ITC under Section 48E of the Code (the "48E Credit"); and

- several new ITC bonus credits under both the Commercial ITC and the 48E Credit, which apply to certain facilities placed in service beginning in 2023, including those meeting certain domestic content requirements, those located in "Energy Communities," and those located in or that benefit low-income communities and tribal communities.

The federal government also offers a personal income tax credit under Section 25D of the Code ("Residential Clean Energy Credit"), for the installation of certain solar power facilities owned by residential taxpayers, which is applicable to customers who purchase a solar energy system outright as opposed to entering into a Customer Agreement. The Residential Clean Energy Credit was 26% if the facility was placed in service during 2020 or 2021; 30% for facilities placed in service from January 1, 2022 through December 31, 2032; 26% for facilities placed in service during 2033; and 22% for facilities placed in service during 2034. The Residential Clean Energy Credit is not available for property placed in service after December 31, 2034.

We and our tax equity partners have claimed and expect to continue to claim investment tax credits ("ITCs") with respect to qualifying solar energy projects. In structuring tax equity partnerships and determining ITC eligibility, we have relied upon applicable tax law and published IRS guidance. The U.S. Treasury issued a final rule on the ITC bonus credit for low-income communities in 2023 and is expected to issue final rules on the other ITC bonus credits in 2024. Some of these final rules may be subject to Congressional Review Act ("CRA") challenges in 2025, based on legal outcomes determining whether certain final rules are subject to the CRA, and on the date the U.S. Treasury finalizes and publishes the final rules.

More than half of the states in the U.S., and many local jurisdictions, have established property tax incentives for renewable energy systems that include exemptions, exclusions, abatements and credits. Many states also have adopted procurement requirements for renewable energy. Approximately thirty states and the District of Columbia have adopted a renewable portfolio standard (and approximately eight other states have some voluntary goal) that requires regulated utilities to procure a specified percentage of total electricity delivered in the state from eligible renewable energy sources, such as solar energy systems, by a specified date. To prove compliance with such mandates, utilities must surrender solar renewable energy credits ("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.

While there are numerous federal, state and local government incentives that benefit our business, some adverse actions, interpretations or determinations of new or existing laws or regulations could have a negative impact on our business. For example, in the future, Congress could revise or eliminate certain provisions in the IRA that could negatively impact our business, such as reducing the percentage or duration of the ITC. Federal agencies may also issue tax guidance or regulations that could negatively impact our business, by, for example, narrowing the applicability of ITC bonus credits or preventing certain businesses from participating.

Human Capital Management

At Sunrun, we love people and believe that focusing on, and investing in, our people is critical to our mission to work together to electrify homes and give all people the joy of clean, abundant energy from the sun.

At Sunrun, the foundation of all our talent programs and initiatives is fostering a culture of inclusive, connected and innovative teams. In 2023, we focused on aligning our human capital strategy to support a high performance, customer-focused culture where our employees can thrive and meet our customer needs. We built additional community partnerships focused on attracting candidates from underrepresented populations and continued to provide learning and development opportunities aimed at promoting engagement and retention.

Inclusion and Diversity. To help us continue to progress toward our goals, we continue to require that a diverse slate of qualified candidates must be presented to hiring managers for all new management-level roles and above. Additionally, we require that our interview panels of all new management-level roles and above include a diverse panel of interviewers. We also have minimum requirements for the length in time that many roles are posted to promote consideration of internal candidates and a broader range of external candidates. In 2023, we fostered deeper talent attraction partnerships with local organizations such as Illinois Solar For All (ILSFA) and military partnerships such as Skillbridge for hiring retiring military service members. To progress our diversity efforts (achieving female director parity and parity in Black, Indigenous, People of Color (BIPOC) managers), we are investing in internal career progression programming and a career progression platform we plan to launch in early 2024. We have grown our Sunrun Employee Resource Groups (“ERGs”) to promote connection and communication among our employees, foster inclusivity, and assist in the development and facilitation of programming to support personal and professional development. Our eight ERGs have grown to a membership of over 1,000 employees as of December 31, 2023. Annually, as part of our impact report on environment, sustainability and governance, we share details on our strategies, focus areas, outcomes achieved and workforce demographics.

Human Capital. As of December 31, 2023, we had approximately 10,833 full-time employees, inclusive of our active direct-to-home salesforce. Our front-line sales and installation teams are 80% of our total workforce. We also engage independent contractors and consultants. None of our employees are covered by collective bargaining agreements. We have not experienced any work stoppages.

Health and Safety. At Sunrun, we start with safety. We prioritize the safety, health, and welfare of our team members as part of our people-centric culture. Our safety strategy consists of four pillars: visible leadership, technical qualification and knowledge, operational discipline, and formal safety communications. To reinforce our safety culture of excellence, we have implemented many initiatives, including an expanded fall protection policy; the implementation of a zero-tolerance policy for violations; a required recurring competent persons and human factors training; onsite safety visits from the executive leadership team with each front-line manager; the adoption of a formal rewards and recognition program; and the incorporation of proactive safety targets within bonus structures.

Available Information

Our principal executive offices are located at 225 Bush Street, Suite 1400, San Francisco, California 94104, and our telephone number is (415) 580-6900. Our website address is www.sunrun.com. Information contained on, or that can be accessed through, our website does not constitute part of this Annual Report on Form 10-K and inclusions of our website address in this Annual Report on Form 10-K are inactive textual references only.

We file annual reports on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K, and amendments to reports filed or furnished pursuant to Sections 13(a) and 15(d) of the Exchange Act. The SEC maintains a website at www.sec.gov that contains reports, proxy and information statements and other information that we file with the SEC electronically. Copies of our reports on Form 10-K, Forms 10-Q, Forms 8-K, and amendments to those reports may also be obtained, free of charge, electronically on the investor relations page on our website located at investors.sunrun.com as soon as reasonably practical after we file such material with, or furnish it to, the SEC.

We also use the investor relations page on our website as a channel of distribution for important company information. Important information, including press releases, analyst presentations and financial information regarding us, as well as corporate governance information, is routinely posted and accessible on the investor relations page on our website. We encourage investors, the media and others interested in Sunrun to review the information we make public in these locations, as such information could be deemed to be material information, including any information posted to our investor relations page on our website, which has been designated a Regulation FD compliant method of disclosure. Information on or that can be accessed through our website is not part of this Annual Report on Form 10-K, any other report or document we file with the SEC, and the inclusion of our website address is an inactive textual reference only.

The Sunrun design logo, "Sunrun" and our other registered or common law trademarks, service marks or trade names appearing in this Annual Report on Form 10-K are the property of Sunrun Inc. Other trademarks and trade names referred to in this Annual Report on Form 10-K are the property of their respective owners.

Data Privacy and Security

In the ordinary course of our business, we may process personal or sensitive data. Accordingly, we are, or may become, subject to numerous data privacy and security obligations, including federal, state, local, and foreign laws, regulations, guidance, and industry standards related to data privacy, security, and protection. Such obligations may include, without limitation, the European Union's General Data Protection Regulation 2016/679 ("EU GDPR"), the EU GDPR as it forms part of United Kingdom ("UK") law by virtue of section 3 of the European Union (Withdrawal) Act 2018 ("UK GDPR"), the ePrivacy Directive, and the Payment Card Industry Data Security Standard ("PCI DSS"). Several states within the United States have enacted or proposed data privacy laws. For example, Virginia passed the Consumer Data Protection Act, and Colorado passed the Colorado Privacy Act. Additionally, we are, or may become, subject to various U.S. federal and state consumer protection laws which require us to publish statements that accurately and fairly describe how we handle personal data and choices individuals may have about the way we handle their personal data.

The California Consumer Privacy Act ("CCPA") is an example of the increasingly stringent and evolving regulatory frameworks related to personal data processing that may increase our compliance obligations and exposure for any noncompliance. For example, the CCPA imposes obligations on covered businesses to provide specific disclosures related to a business's collecting, using, and disclosing personal data and to respond to certain requests from California residents related to their personal data (for example, requests to know of the business's personal data processing activities, to delete the individual's personal data, and to opt out of certain personal data disclosures). Also, the CCPA provides for civil penalties and a private right of action for data breaches which may include an award of statutory damages. In addition, the California Privacy Rights Act of 2020 ("CPRA") expanded the CCPA by giving California residents the ability to limit use of certain sensitive personal data, establishing restrictions on personal data retention, expanding the types of data breaches that are subject to the CCPA's private right of action, and establishing a new California Privacy Protection Agency to implement and enforce the new law.

See the section titled "Risks Related to Our Business Operations" for additional information about the laws and regulations to which we may become subject and about the risks to our business associated with such laws and regulations.

Item 1A. Risk Factors.

Investing in our common stock involves a high degree of risk. You should carefully consider the risks and uncertainties described below, together with all of the other information in this Annual Report on Form 10-K, including the section titled "Management's Discussion and Analysis of Financial Condition and Results of Operations" and our consolidated financial statements and related notes, before making a decision to invest in our common stock. The risks and uncertainties described below may not be the only ones we face. If any of the risks actually occur, our business, financial condition, results of operations, cash flows and prospects could be materially and adversely affected. In that event, the market price of our common stock could decline, and you could lose part or all of your investment.

Risks Related to the Solar Industry

The solar energy industry is an emerging market which is constantly evolving and may not develop to the size or at the rate we expect.

The solar energy industry is an emerging and constantly evolving market opportunity. We believe the solar energy industry is still developing and maturing, and we cannot be certain that the market will grow to the size or at the rate we expect. For example, we have experienced increases in cancellations of our Customer Agreements in certain geographic markets during various periods in our operating history. Any future growth of the solar energy market and the success of our solar service offerings depend on many factors beyond our control, including recognition and acceptance of the solar service 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 service offerings cost effectively. If the markets for solar energy do not develop to the size or at the rate we expect, our business may be adversely affected.

Solar energy has yet to achieve broad market acceptance and depends in part on continued support in the form of rebates, tax credits, and other incentives from federal, state and local governments. Additionally, there have been significant changes in the residential solar policy and pricing framework in California, which is one of our key markets and represents over 45% of our customer base. Changes to California's net metering policy adopted in December 2022 present a significant change to the financial benefits California customers receive from our solar systems and may limit the financial attractiveness of our offerings in this market, particularly for solar-only systems. Originations in California are below levels prior to the Net Billing Tariff ("NBT") transition, and without further increases in originations, our new installations in California may continue to decline compared to prior periods, which could have a material adverse effect on our business operations and financial performance. Further, if support diminishes materially for solar policy related to rebates, tax credits, bill crediting, or other incentives, our ability to obtain external financing on acceptable terms, or at all, could be materially adversely affected. These types of funding limitations could lead to inadequate financing support for the anticipated growth in our business. Furthermore, growth in residential solar energy depends in part on macroeconomic conditions, retail prices of electricity and customer preferences, each of which can change quickly. Declining macroeconomic conditions, including in job markets and residential real estate markets, could contribute to instability and uncertainty among customers and impact their financial wherewithal, credit scores or interest in entering into long-term contracts, even if such contracts would generate immediate and long-term savings.

Furthermore, market prices of retail electricity generated by utilities or other energy sources could decline for a variety of reasons, as discussed further below. Any declines in macroeconomic conditions, changes in retail prices of electricity or changes in customer preferences would adversely impact our business.

Achieving net zero emissions by 2050 will require an unprecedented transformation of American energy systems and the adoption of a wide variety of clean energy, storage, and home electrification solutions. Our successful deployment of such products will depend on several factors outside our control, including shifting market conditions and policy frameworks. Our failure to adapt to changing market conditions, to compete successfully with existing or new competitors, and to adopt new or enhanced offerings could limit our growth and have a material adverse effect on our business and prospects.

We have historically benefited from declining costs in our industry, and our business and financial results may be harmed as a result of recent and any continued increases in costs associated with our solar service

offerings and any failure of these costs to continue declining as we currently expect. If we do not reduce our cost structure in the future, our ability to continue to be profitable may be impaired.

Declining costs related to raw materials, manufacturing and the sale and installation of our solar service offerings have been a key driver in the pricing of our solar service offerings and, more broadly, customer adoption of solar energy. While historically the prices of solar panels and raw materials have declined, the cost of solar panels and raw materials have at times increased and may increase in the future, and such products' availability could decrease, due to a variety of factors, including supply chain disruptions, inflation, tariffs and trade barriers, export regulations, geopolitical conflicts, regulatory or contractual limitations, industry market requirements, and changes in technology and industry standards.

For example, on February 4, 2022, the Biden Administration announced a four-year extension of the 2018 tariffs imposed in response to a petition filed under Section 201 of the Trade Act of 1974 (the "Section 201 Tariffs"). The Biden Administration set the Section 201 Tariffs at 14.75%, with a modest rate reduction each year. The decision exempted bifacial modules from the tariffs as well as 5 GW of imported solar cells each year.

Separately, in August 2021, an anonymous group of U.S. solar manufacturers filed petitions with the U.S. Department of Commerce (the "DOC") alleging that Chinese companies were evading antidumping and countervailing duty (AD/CVD) orders on crystalline silicon photovoltaic cells and modules, which are used in the production of solar panels. The petitioners requested a federal investigation into Chinese firms allegedly circumventing tariffs by manufacturing in Malaysia, Vietnam and Thailand, and sought to apply the existing tariffs on China to companies in these three countries. Ultimately, the DOC objected to the anonymous nature of the petition, and it expired. Subsequently, on February 8, 2022, Auxin Solar, a U.S.-based solar panel manufacturer, submitted a petition to the DOC to request country-wide circumvention inquiries pursuant to Section 781(b) of the Tariff Act of 1930 concerning crystalline silicon photovoltaic cells and modules assembled in Malaysia, Thailand, Vietnam and Cambodia using Chinese inputs. On April 1, 2022, the DOC initiated the inquiries, and, after conducting an investigation, issued a preliminary decision on December 2, 2022, recommending that the Biden Administration impose tariffs on certain solar panel imports from the Southeast Asian countries.

Prior to the DOC issuing its preliminary decision, the Biden Administration in June 2022 issued Presidential Proclamation 10414, which paused the collection of any new anti-dumping or countervailing duty of certain solar cells and modules imported from Cambodia, Malaysia, Thailand, and Vietnam for two years, until June 2024. The White House initiated this "bridge" action in advance of the DOC's preliminary decision, in effect deferring any new solar tariffs for 24 months. Even though the White House effectively deferred any new tariffs from taking effect until June 2024, the DOC's investigation and subsequent preliminary decision had the effect of increasing module prices and affecting module supply. In August 2023, the DOC published a final determination in the affirmative, consistent with the preliminary determination. In addition, Congress passed legislation (H.J. Res. 39) in 2023 via procedures of the CRA that would have rescinded Presidential Proclamation 10414 and retroactively imposed tariffs on certain imported modules, but President Biden vetoed the legislation on May 16, 2023, and Congress failed to override his veto on May 24, 2023. In December 2023, Auxin Solar, a U.S.-based solar panel manufacturer filed a suit seeking to overturn the regulations implementing Presidential Proclamation 10414 and overturn the Biden Administration's moratorium on additional duties and tariffs on certain solar cells and modules imported from Cambodia, Malaysia, Thailand, or Vietnam. In addition, as Presidential Proclamation 10414 expires in June 2024, panel prices may increase.

In addition, U.S. laws and regulations intended to prevent the importation of goods manufactured with forced labor has and could continue to affect our business operation and supply chain, including the Uyghur Forced Labor Prevention Act and the withhold release order ("WRO") that U.S. Customs and Border Protection ("CBP") issued on June 24, 2021 applicable to certain silica-based products manufactured in the Xinjiang Uyghur Autonomous Region of China. Intensive examinations, withhold release orders, and related governmental procedures have resulted in supply chain and operational delays throughout the industry, and we have implemented policies and procedures to maintain compliance and minimize delays. These and similar trade restrictions that may be imposed in the future could cause delivery and installation delays, and restrict the global supply of polysilicon and solar products. This could result in near-term demand for available solar energy systems despite higher costs, increased costs of polysilicon and the overall cost of solar energy systems, and equipment shortages, potentially reducing overall demand for and limiting the supply of our products and services.

We cannot predict what actions may ultimately be taken with respect to tariffs or trade relations between the United States and other countries, what products may be subject to such actions, or what actions may be taken by other countries in retaliation. The tariffs described above, the adoption and expansion of trade restrictions, the

occurrence of a trade war, or other governmental action related to tariffs, trade agreements or related policies have the potential to adversely impact our supply chain and access to equipment, our costs and ability to economically serve certain markets. Any such cost increases or decreases in availability could slow our growth and cause our financial results and operational metrics to suffer. We cannot predict whether and to what extent U.S. trade policies will change in the future and cannot ensure that additional tariffs or other restrictive measures will not continue or increase.

Other factors may also impact costs, such as our choice to make significant investments to drive growth in the future.

We face competition from traditional energy companies as well as solar and other renewable energy companies.

The solar energy industry is highly competitive and continually evolving as participants strive to distinguish themselves within their markets and compete with large utilities. We believe that our primary competitors are the established utilities that supply energy to homeowners by traditional means. We compete with these utilities primarily based on price, predictability of price, and the ease by which homeowners can switch to electricity generated by our solar service offerings. If we cannot offer compelling value to customers based on these factors, then our business and revenue will not grow. Utilities generally have substantially greater financial, technical, operational and other resources than we do. As a result of their greater size, utilities 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. Furthermore, these competitors are able to devote substantially more resources and funding to regulatory and lobbying efforts.

Utilities could also offer other value-added products or services that could help them compete with us even if the cost of electricity they offer is higher than ours. In addition, a majority of utilities' sources of electricity are non-solar, which may allow utilities to sell electricity more cheaply than we can. Moreover, regulated utilities are increasingly seeking approval to "rate-base" their own residential solar and battery businesses. Rate-basing means that utilities would receive guaranteed rates of return for their solar and battery businesses. This is already commonplace for utility-scale solar projects and commercial solar projects. While few utilities to date have received regulatory permission to rate-base residential solar or storage, our competitiveness would be significantly harmed should more utilities receive such permission because we do not receive guaranteed profits for our solar service offerings.

We face competition from other residential solar service providers, and we also may face competition from new entrants into the market as a result of the passage of the IRA and its impacts and benefits to the solar industry. Some of these competitors may have a higher degree of brand name recognition, differing business and pricing strategies, lower barriers to entry into the solar market, and greater capital resources than we have, as well as extensive knowledge of our target markets. If we are unable to establish or maintain a consumer brand that resonates with customers, maintain high customer satisfaction, or compete with the pricing offered by our competitors, our sales and market share position may be adversely affected, as our growth is primarily dependent on originating new customers. We also face competitive pressure from companies that may offer lower-priced consumer offerings than we do.

In addition, we compete with companies that are not regulated like traditional utilities but that have access to the traditional utility electricity transmission and distribution infrastructure. These energy service companies are able to offer customers electricity supply-only solutions that are competitive with our solar service offerings on both price and usage of solar 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 customers, particularly those who wish to avoid long-term contracts or have an aesthetic or other objection to putting solar panels on their roofs.

Furthermore, we face competition from purely finance-driven nonintegrated competitors that subcontract out the installation of solar energy systems, from installation businesses (including solar partners) that seek financing from external parties, from large construction companies and from electrical and roofing companies. In addition, local installers that might otherwise be viewed as potential solar partners may gain market share by being able to be the first providers in new local markets. Some of these competitors may provide energy at lower costs than we do. Finally, as declining prices for solar panels and related equipment has resulted in an increase in consumers

purchasing instead of leasing solar energy systems, we face competition from companies that offer consumer loans for these solar panel purchases.

As the solar industry grows and evolves, we will continue to face existing competitors as well as new competitors who are not currently in the market (including those resulting from the consolidation of existing competitors) that achieve significant developments in alternative technologies or new products such as storage solutions, EV chargers, loan products, or other programs related to third-party ownership. Our failure to adapt to changing market conditions, to compete successfully with existing or new competitors and to adopt new or enhanced technologies could limit our growth and have a material adverse effect on our business and prospects.

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

A customer's decision to buy solar energy from us often stems from a desire to lower electricity costs. Decreases in the retail prices of electricity from utilities or other energy sources would harm our ability to offer competitive pricing and could harm our business. The price of electricity from utilities could decrease as a result of:

- the construction of a significant number of new power generation plants, including nuclear, coal, natural gas or renewable energy technologies;
- the construction of additional electric transmission and distribution lines;
- a reduction in the price of natural gas or other natural resources;
- energy conservation technologies and public initiatives to reduce electricity consumption;
- development of new energy technologies that provide less expensive energy, including storage; and
- utility rate adjustments and customer class cost reallocation.

A reduction in utility electricity prices would make the purchase of our solar service offerings less attractive. If the retail price of energy available from utilities were to decrease due to any of these or other reasons, we would be at a competitive disadvantage. As a result, we may be unable to attract new customers and our growth would be limited.

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

The energy produced and revenue and cash flows generated by a solar energy system depend on suitable solar and weather conditions, both of which are beyond our control. Furthermore, components of our systems, such as panels and inverters, could be damaged by severe weather or natural catastrophes, such as hailstorms, tornadoes, fires, or earthquakes. In these circumstances, we generally would be obligated to bear the expense of repairing the damaged solar energy systems that we own. Sustained unfavorable weather or environmental conditions also could unexpectedly delay the installation of our solar energy systems, leading to increased expenses and decreased revenue and cash flows in the relevant periods. Extreme weather conditions, as well as the natural catastrophes that could result from such conditions, can severely impact our operations by delaying the installation of our systems, lowering sales, and causing a decrease in the output from our systems due to smoke or haze. Weather patterns could change, making it harder to predict the average annual amount of sunlight striking each location where our solar energy systems are installed. This could make our solar service offerings less economical overall or make individual systems less economical. Any of these events or conditions could harm our business, financial condition, and results of operations.

Climate change may have long-term impacts on our business, our industry, and the global economy.

Climate change poses a systemic threat to the global economy and will continue to do so until our society transitions to renewable energy and decarbonizes. While our core business model seeks to accelerate this transition to renewable energy, there are inherent climate-related risks to our business operations. Warming temperatures throughout the United States, and in California, our biggest market, in particular, have contributed to extreme weather, intense drought, and increased wildfire risks. These extreme weather events have the potential to disrupt our business, our third-party suppliers, and our customers, and may cause us to incur additional operational costs. They can also cause a decrease in the output from our systems due to smoke or haze. Additionally, if weather patterns significantly shift due to climate change, it may be harder to predict the average annual amount of sunlight striking each location where our solar energy systems are installed. This could make our solar service offerings less economical overall or make individual systems less economical.

Natural disasters and extreme weather events associated with climate change have impacted our operations by delaying the installation of our systems, leading to increased expenses and decreased revenue and cash flows. For instance, the series of twelve atmospheric river weather events that deluged the western United States in 2023, resulted in prolonged, intense downpour of rain and high wind gusts, and put home roofs under acute stress. As a result, we have seen a larger than usual number of damage claims in 2023, which have resulted in higher associated costs. Continued increases in similar types of extreme weather events may harm our business, financial condition, and results of operations.

Our corporate mission is to connect people to the cleanest energy on earth, and we seek to mitigate these climate-related risks not only through our core business model and sustainability initiatives, but also by working with organizations who are also focused on mitigating their own climate-related risks.

Risks Related to Our Operating Structure and Financing Activities

We need to raise capital to finance the continued growth of our operations and solar service business. If capital is not available to us on acceptable terms, as and when needed, our business and prospects would be materially and adversely impacted. In addition, our business is affected by general economic conditions and related uncertainties affecting markets in which we operate. Volatility in current economic conditions could adversely impact our business, including our ability to raise financing.

Our future success depends on our ability to raise capital at acceptable terms from third parties to grow our business. To date, we have funded our business principally through low-cost tax equity investment funds. If we are unable to establish new investment funds when needed, or upon desirable terms, the growth of our solar service business would be impaired. Changes in tax law or changes in the interpretation of existing tax law could also affect our ability to establish such tax equity investment funds, impact the terms of existing or future funds, or reduce the pool of capital available for us to grow our business.

The passage of the IRA, which extended subsidies for various renewable energy technologies, is expected to lead to additional demands for tax equity. As a result, availability of tax equity may present constraints to our growth and harm our financial performance. In addition, terms for tax equity funds, including the realization of tax credit value through potential structures that utilize transferability of the ITC, may not be at terms we view as favorable.

The contract terms in certain of our existing investment fund documents contain various conditions with respect to our ability to draw on financing commitments from the fund investors, including conditions that restrict our ability to draw on such commitments if an event occurs that could reasonably be expected to have a material adverse effect on the fund or, in some instances, us. If we are not able to satisfy such conditions due to events related to our business, a specific investment fund, developments in our industry, including tax or regulatory changes, or otherwise, and as a result, we are unable to draw on existing funding commitments, we could experience a material adverse effect on our business, liquidity, financial condition, results of operations and prospects. If any of the investors that currently invest in our investment funds decide not to invest in future investment funds to finance our solar service offerings due to general market conditions, concerns about our business or prospects, decreased appetite for tax benefits or any other reason, or materially change the terms under which they are willing to provide future financing, we would need to identify new investors to invest in our investment funds and our cost of capital may increase.

In addition, our business and results of operations are materially affected by conditions in the global capital markets and the economy. A general slowdown or volatility in current economic conditions, the level of U.S. national debt, currency fluctuations, unemployment rates, the availability and cost of credit, the U.S. housing market, tariffs, trade wars, inflation levels, interest rates, energy costs, and concerns over a slowing economy or other factors, could adversely affect our business, including our ability to raise financing.

There can be no assurance that we will be able to continue to successfully access capital in a manner that supports the growth of our business. Certain sources of capital may not be available in the future, and competition for any available funding may increase. We cannot be sure that we will be able to maintain necessary levels of funding without incurring high funding costs, unfavorable changes in the terms of funding instruments or the liquidation of certain assets. 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 on less favorable terms than those provided to our competitors or currently provided to us. If we are unable to arrange new or alternative methods of financing on favorable terms, our business, liquidity, financial condition, results of operations, and prospects could be materially and adversely affected.

Volatility and increases in interest rates raise our cost of capital and may adversely impact our business.

While interest rates had been at long-term historic lows during large parts of our operating history, they have increased in recent years, and may continue to increase. Rising interest rates, including recent historic increases starting in 2021, have resulted and may continue to result in a decrease in our advance rates, reducing the proceeds we receive from certain investment funds. Because our financing structure is sensitive to volatility in interest rates, higher rates increase our cost of capital and decrease the amount of capital available to us to finance the deployment of new solar energy systems. Additionally, we have selectively increased pricing in many markets over the last year in response to higher interest rates, and may continue to do so in the future, which may impact the overall attractiveness of our offerings to potential new customers. Our future success depends on our ability to raise capital from fund investors and obtain secured lending to help finance the deployment of our solar service offerings. Part of our business strategy is to seek to reduce our cost of capital through such financing arrangements to improve our margins, offset reductions in government incentives and maintain the price competitiveness of our solar service offerings. Rising base interest rates or credit spreads, which have been, and may continue to be, worsened by inflation, an economic recession, or other variables, may have an adverse impact on our ability to offer attractive pricing on our solar service offerings to customers, which could negatively impact sales of our solar energy offerings and our cash flows. Because we typically enter into interest rate swaps shortly after the installation of a system, we are subject to higher interest rate risk between customer pricing through system installation, which may cause volatility to our cash flows.

The majority of our cash flows to date have been from solar service offerings under Customer Agreements that have been monetized under various investment fund structures. One of the components of this monetization is the present value of the payment streams from customers who enter into these Customer Agreements. If the rate of return required by capital providers, including debt providers, rises as a result of a rise in interest rates, it will reduce the present value of the customer payment stream and consequently reduce the total value derived from this monetization. Any measures that we could take to mitigate the impact of rising interest rates could ultimately have an adverse impact on the value proposition that we offer customers.

We expect to incur substantially more debt in the future, which could intensify the risks to our business.

We and our subsidiaries expect to incur additional debt in the future, subject to the restrictions contained in our debt instruments. Some of our existing debt arrangements restrict our ability to incur additional indebtedness, including secured indebtedness, and we may be subject to similar restrictions under the terms of future debt arrangements. These restrictions could inhibit our ability to pursue our business strategies. Increases in our existing debt obligations would further heighten the debt related risk discussed above.

Furthermore, there is no assurance that we will be able to enter into new debt instruments on acceptable terms or at all. If we were unable to satisfy financial covenants and other terms under existing or new instruments, or obtain waivers or forbearance from our lenders, or if we were 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.

We may be required to make payments or contribute assets to our investors upon the occurrence of certain events, including one-time reset or true-up payments or upon the exercise of a redemption option by one of our tax equity investors.

Our investors in our tax equity investment funds typically advance capital to us based on, among other things, production capacity estimates. The models we use to calculate prepayments in connection with certain of our tax equity investment funds are updated at a fixed date occurring after placement in service of all applicable solar energy systems or an agreed upon date (typically within the first year of the applicable term) to reflect certain specified conditions, as they exist at such date including the ultimate system size of the equipment that was sold or leased to the tax equity investment fund, the cost thereof, and the date the equipment went into service. In some cases, these true-up models also incorporate any changes in law, which would include any reduction in rates (and thus any reduction in the benefits of depreciation). As a result of this true-up, applicable payments are resized, and we may be obligated to refund a portion of the tax equity investor's prepayments or to contribute additional assets to the tax equity investment fund. In addition, certain of our tax equity fund investors have the right to require us to purchase their interests in the tax equity investment funds after a set period of time, generally at a price equal to the greater of a set purchase price or fair market value of the interests at the time of the repurchase. Any significant refunds, capital contributions, or purchases that we may be required to make could adversely affect our liquidity or financial condition.

Loan financing developments could adversely impact our business.

The third-party ownership structure, which we bring to market through our solar service offerings, continues to be the predominant form of system ownership in the residential solar market in many states. However, with the development of new loan financing products, we have seen a modest shift from leasing and power purchase arrangements to outright purchases of the solar energy system by the customer (i.e., a customer purchases the solar energy system outright instead of leasing the system or buying power from us). Continued increases in third-party loan financing products and outright purchases could result in the demand for long-term Customer Agreements to decline, which would require us to shift our product focus to respond to the market trend and could have an adverse effect on our business. The majority of our customers have historically chosen our solar service offerings as opposed to buying a solar energy system outright. Our financial model is impacted by the volume of customers who choose our solar service offerings, and an increase in the number of customers who choose to purchase solar energy systems (whether for cash or through third-party financing) may harm our business and financial results.

Servicing our debt requires a significant amount of cash to comply with certain covenants and satisfy payment obligations, and we may not have sufficient cash flow from our business to pay our substantial debt and may be forced to take other actions to satisfy our obligations under our indebtedness, which may not be successful.

We have substantial amounts of debt, including our convertible senior notes ("Notes"), our credit facility and the non-recourse debt facilities entered into by our subsidiaries, as discussed in more detail in the section titled "Management's Discussion and Analysis of Financial Condition and Results of Operations" and our consolidated financial statements, in each case, included in this periodic report. Our ability to make scheduled payments of the principal of, to pay interest on or to refinance our indebtedness depends on our future performance, which is subject to economic, financial, competitive, and other factors beyond our control. Our business may not continue to generate cash flow from operations in the future sufficient to service our debt and make necessary capital expenditures to operate our business. If we are unable to generate such cash flow, we may be required to adopt one or more alternatives, such as selling assets, restructuring debt or obtaining additional equity capital on terms that may be onerous or highly dilutive. Our ability to timely repay or otherwise refinance our indebtedness will depend on the capital markets and our financial condition at such time. We may not be able to engage in any of these activities or engage in these activities on desirable terms, which could result in a default on our debt obligations and negatively impact our financial condition and prospects.

Indebtedness under certain of our Senior and Subordinated Debt Facilities and our other credit facilities accrue interest at variable interest rates based on the Secured Overnight Financing Rate (or other benchmark rates based thereof, collectively, "SOFR").

In certain of our debt facilities accruing interest based on SOFR, daily changes in the rate have, on occasion, been more volatile than daily changes in comparable benchmark or market rates, and SOFR over time may bear little or no relation to the historical actual or historical indicative data. Additionally, some of our credit facilities based on SOFR include a credit spread adjustment on SOFR due to LIBOR representing an unsecured lending rate while SOFR represents a secured lending rate. In addition, ARRC has imposed certain curbs on interdealer trading in SOFR derivatives, which reduce market liquidity and may raise hedging costs for us as end-users. The possible volatility of, and uncertainty around, SOFR as the LIBOR replacement rate, the addition of credit spread adjustment in certain of our facilities, and potential illiquidity in SOFR derivative markets could result in higher borrowing costs for us, which would adversely affect our financial condition, and results of operations.

We may not have the ability to raise the funds necessary to settle conversions of the Notes in cash or to repurchase the Notes upon a fundamental change, and our future debt may contain limitations on our ability to pay cash upon conversion or repurchase of the Notes.

The Notes will have the right to require us to repurchase all or a portion of their Notes upon the occurrence of a fundamental change under the indenture, which includes certain events such as a change of control, before the maturity date at a fundamental change repurchase price equal to 100% of the principal amount of the Notes to be repurchased, plus accrued and unpaid special interest, if any. In addition, upon conversion of the Notes, unless we elect to deliver solely shares of our common stock to settle such conversion (other than paying cash in lieu of delivering any fractional share), we will be required to make cash payments in respect of the Notes being converted. However, we may not have enough available cash or be able to obtain financing at the time we are required to make repurchases of Notes surrendered therefor or pay cash for Notes being converted. In addition, our ability to repurchase the Notes or to pay cash upon conversions of the Notes may be limited by law, by regulatory authority or by agreements governing our indebtedness at the time.

Our failure to repurchase Notes at a time when the repurchase is required by the indenture governing such Notes or to pay any cash payable on future conversions of the Notes as required by the indenture would constitute a default. A default under the indenture or the fundamental change itself could also lead to a default under agreements governing our existing or future indebtedness. If the repayment of the related indebtedness were to be accelerated after any applicable notice or grace periods, we may not have sufficient funds to repay the indebtedness and repurchase the Notes or make cash payments upon conversions thereof.

We are subject to counterparty risk with respect to the capped call transactions.

In connection with our issuance of the Notes in January 2021, we entered into privately negotiated capped call transactions (the “Capped Call transactions”) with certain financial institutions (the "option counterparties"). The option counterparties are financial institutions or affiliates of financial institutions, and we will be subject to the risk that one or more of such option counterparties may default under the Capped Call transactions. Our exposure to the credit risk of the option counterparties will not be secured by any collateral. If any option counterparty becomes subject to bankruptcy or other insolvency proceedings, with respect to such option counterparty’s obligations under the relevant Capped Call transaction, we will become an unsecured creditor in those proceedings with a claim equal to our exposure at that time under such transaction. Our exposure will depend on many factors but, generally, an increase in our exposure will be positively correlated to an increase in our common stock market price and in the volatility of the market price of our common stock. In addition, upon a default by any of the option counterparties, we may suffer adverse tax consequences and dilution with respect to our common stock. We can provide no assurance as to the financial stability or viability of any of the option counterparties.

Risks Related to Regulation and Policy

The customer value proposition for distributed solar, storage, and home electrification products is influenced by a number of factors, including, but not limited to, the retail price of electricity, the valuation of electricity not consumed on site and exported to the grid, the rate design mechanisms of customers’ utility bills, various policies related to the permitting and interconnection costs of our products to homes and the grid, the availability of incentives for solar, batteries, and other electrification products, and other policies which allow aggregations of our systems to provide the grid value. Significant changes to any of these factors may impact the competitiveness of our service offerings to customers.

The value proposition of our solar and storage offering, as well as our other related home electrification offerings, such as the electric vehicle charging station, is impacted by several factors outside of our control including, but are not limited to, the retail price of electricity, the valuation of electricity not consumed on site but exported to the grid, the rate design mechanisms of customers' utility bills, various policies related to the permitting and interconnection costs of our products to homes and the grid, the availability of incentives for solar, batteries, and other electrification products, and other policies which allow aggregations of our systems to provide the grid value. For over two decades across the United States, utilities, their trade associations, fossil fuel interests, and some other stakeholders not aligned with a decentralized grid have been challenging many legislative and regulatory policies that enhance the customer value proposition of residential solar and storage.

In connection with the value attributed to exported electricity, net metering ("NEM") has traditionally been the main policy mechanism to measure and value exported electricity sent back to the grid in the markets within which we do business. That value has always varied depending on the retail price of power in a certain market, substantial differences in rate design per market, and NEM market specific differences, including detail around how to carry over NEM credits, whether or not to cap the amount of net metered solar in a specific market, or how a market values the exported electricity. A substantial majority of the markets in which we operate have implemented NEM policies, allowing end customers to receive credits for the electricity not consumed on site and exported to the grid.

Some states, including our largest market of California, have moved away from the traditional retail NEM credit structure of paying the full retail rate for exported electricity, and instead, such states have chosen to value excess generation by customers' solar systems in different ways. In 2016, the Arizona Corporation Commission ("ACC") replaced retail NEM with a declining fixed export rate. In 2017, Nevada implemented a reduced credit step down to NEM credits over time. Hawaii, a state with extremely high distributed solar penetration, effectively ended NEM in 2016 and has since become a solar plus battery market, with programs that utilize additional values from aggregated distributed resources, including rooftop solar paired with batteries, to support grid needs. Many states across the United States have traditionally set limits on the amount of rooftop solar that can be exported for retail credit and there is a long legislative and regulatory history of those limitations being extended in various states, including California, New Jersey, Illinois, North Carolina, and South Carolina.

Our ability to sell our solar service offerings may be adversely impacted by the failure to extend existing limits or "caps" to retail NEM or the elimination of other existing policies that value exported electricity to the grid. On April 26, 2022, Florida Governor DeSantis vetoed legislation that would have established a threshold date and percentage trigger when retail NEM could have faced declines in the immediate export rate in Florida. New Jersey currently has no NEM cap but reached a threshold that triggers regulatory review of its NEM policy, which will proceed over the next two years.

Most notably, as a result of the finalization of the NEM proceeding on December 15, 2022 by the California Public Utilities Commission ("CPUC"), California has moved to a NBT structure in which exported electricity is no longer valued at the retail rate and is instead valued by that state's "avoided cost" annual calculations, which substantially decreased the credit allocated to an exported electron during the day. The final California NEM decision rejected a very controversial solar specific fixed charge and rejected the creation of new non-bypassable charges, minimum bills, and grid participation charges for solar and solar plus storage customers. Additionally, the final California NEM decision made no retroactive changes to legacy NEM 1.0 or 2.0 California customers. In mid-April 2023, new California solar customers located in areas serviced by investor-owned utilities ("IOU") began applying for service under the new NBT.

The final California NEM decision presents a significant change to the residential solar market in California. Under this new framework, storage paired with solar will have a heightened value proposition to customers, and we may see increased demand for our solar plus storage offerings, thereby increasing the importance of procuring a variety of battery storage products and potentially accentuating supply chain risks related to battery storage systems. The new NBT pricing framework may also result in the introduction of new product offerings and pricing structures by our competitors throughout the solar and utilities industries, and has led to our introduction of Sunrun Shift™, our home solar subscription offering that maximizes the value of solar energy under California's NBT by increasing self-consumption during peak hours when rates are highest and reducing low-value exports back to the grid through the use of a new storage configuration. This may also result in increased competition and uncertainty regarding the demand for such new products and offerings, which may adversely impact our business and results of operations.

In 2022, before the final California NEM decision, California passed legislation (AB 205) which provided the CPUC with the ability to implement three tiers of income-graduated fixed charges on all California customers above the previous $10 per month maximum. In mid-April 2023, new California solar customers located in areas serviced by IOUs began applying for service under the new NBT. Subsequently, in early April 2023, the California IOUs filed an initial proposal that would represent the highest fixed charges in the United States for all residential customers subject to IOU electricity service in California. In a June 2023 ruling, the CPUC indicated that it will approve by July 2024 guidelines for future development and implementation of income-graduated fixed charges, but that implementation of the first iteration of these charges is not expected to occur until late 2026. Legislation (AB 1999) has recently been introduced seeking to repeal the 2022 legislation that authorized income-graduated fixed charges. Depending on the outcome of the legislation and the CPUC proceeding, which is currently considering the size of the fixed charges, how the income categories are determined, and rate design for future solar plus storage customers, the value proposition for our customers would be impacted. The pending determination may also result in uncertainty regarding demand for such new products and offerings, which may adversely impact our business and results of operations. Additionally, the imposition of charges may disproportionately impact or specifically single out homeowners who have installed solar energy systems, including our customers, which could adversely impact our business.

Electric utility statutes and regulations and changes to such statutes or regulations may present technical, regulatory and economic barriers to the purchase and use of our solar service offerings that may significantly reduce demand for such offerings.

Federal, state, and local government statutes and regulations concerning electricity heavily influence the market for our solar service offerings and are constantly evolving. These statutes, regulations, and administrative rulings relate to electricity pricing, net metering, consumer protection, incentives, taxation, competition with utilities and the interconnection of homeowner-owned and third party-owned solar energy systems to the electrical grid. These statutes and regulations are constantly evolving. Governments, often acting through state utility or public service commissions, change and adopt different rates for residential customers on a regular basis and these changes can have a negative impact on our ability to deliver savings, or energy bill management, to customers.

In addition, many utilities, their trade associations, and fossil fuel interests in the country, which have significantly greater economic, technical, operational, and political resources than the residential solar industry, are currently challenging solar-related policies, which may have the effect of reducing the competitiveness of residential solar energy. Any adverse changes in solar-related policies could have a negative impact on our business and prospects.

Regulations and policies related to rate design could deter potential customers from purchasing our solar service offerings, reduce the value of the electricity our systems produce, and reduce any savings that our customers could realize from our solar service offerings.

All states regulate investor-owned utility retail electricity pricing. In addition, there are numerous publicly owned utilities and electric cooperatives that establish their own retail electricity pricing through some form of regulation or internal process. These regulations and policies could deter potential customers from purchasing our solar service offerings. For example, some utilities in states such as Arizona and Utah have sought and secured rate design changes that reduce the credit for residential solar exports to below the retail rate and impose new charges for rooftop solar customers. Utilities in additional states may follow suit. Such rate changes can include changing rates to charge lower volume-based rates—the rates charged for kilowatt hours of electricity purchased by a residential customer—while raising unavoidable fixed charges that an end customer is subject to when they purchase solar energy from third parties, and levying charges on homeowners based on their point of maximum demand during a month (referred to as “demand charge”). For example, the Arizona Public Service Company offers residential demand charge rate plans and if our solar customers have subscribed to those plans, they may not realize typical savings from our offerings. These forms of rate design could adversely impact our business by reducing the value of the electricity our solar energy systems produce compared to retail net metering, and reducing any savings customers realize by purchasing our solar service offerings. These proposals could continue or be replicated in other states. In addition to changes in general rates charged to all residential customers, utilities sometimes have proposed solar-specific charges (which may be fixed charges, capacity-based charges, or other rate charges). Any of these changes could materially reduce the demand for our offerings and could limit the number of markets in which our offerings are competitive with electricity provided by the utilities.

We are not currently regulated as a utility under applicable laws, but we may be subject to regulation as a utility in the future or become subject to new federal and state regulations for any additional solar service offerings we may introduce in the future.

Most federal, state, and municipal laws do not currently regulate us as a utility. As a result, we are not subject to the various regulatory requirements applicable to U.S. utilities. However, federal, state, local or other applicable regulations could place significant restrictions on our ability to operate our business and execute our business plan by prohibiting or otherwise restricting our sale of electricity. These regulatory requirements could include restricting our sale of electricity, as well as regulating the price of our solar service offerings. For example, the New York Public Service Commission and the Illinois Power Agency have issued orders requiring registration of distributed energy providers in certain ways similar to energy service companies, which increases the regulatory compliance burden for us in such states. If we become subject to the same regulatory authorities as utilities in other states or if new regulatory bodies are established to oversee our business, our operating costs could materially increase and we may not be able to execute on our business plans.

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

Our Customer Agreements are third-party ownership arrangements. Sales of electricity by third parties face regulatory challenges in some states and jurisdictions. These challenges pertain to issues such as whether third-party-owned systems qualify for the same rebates, tax exemptions or other non-tax incentives available for homeowner-owned solar energy systems, whether third-party-owned systems are eligible at all for these incentives, whether our Customer Agreements are properly characterized as leases or PPAs, and whether third-party-owned systems are eligible for net metering and the associated significant cost savings. In 2021, South Carolina enacted legislation providing a solar property tax exemption. Texas and Connecticut clarified through legislation that third-party-owned residential solar systems would be treated the same as customer-owned systems, and would qualify for the existing residential solar property tax exemption. Adverse regulatory treatment of third-party ownership arrangements could reduce demand for our solar service offerings, adversely impact our access to capital and cause us to increase the price we charge customers for energy.

Interconnection limits or circuit-level caps imposed by regulators may significantly reduce our ability to sell electricity from our solar service offerings in certain markets or slow interconnections, harming our growth rate and customer satisfaction scores.

Interconnection rules establish the circumstances in which rooftop solar will be connected to the electricity grid. Interconnection limits or circuit-level caps imposed by regulators may curb our growth in key markets. Utilities throughout the country have different rules and regulations regarding interconnection and some utilities cap or limit the amount of solar energy that can be interconnected to the grid. Our systems do not provide power to customers until they are interconnected to the grid, and some relevant laws and regulations in certain markets may considerably slow the timing of interconnection, which may in turn impact the system production and our business and sales results.

Interconnection regulations are based on claims from utilities regarding the amount of solar energy that can be connected to the grid without causing grid reliability issues or requiring significant grid upgrades. Although recent rulings from the Hawaii Utilities Commission have helped resolve some problems, historically, interconnection limits or circuit-level caps have slowed the pace of our installations in Hawaii. Similar interconnection limits could slow our future installations in Hawaii, Puerto Rico, Colorado, New Jersey, or other markets, harming our growth rate and customer satisfaction scores. Similarly, the California, Illinois, and Hawaii Public Utilities Commissions require the activation of some advanced inverter functionality to head off presumed grid reliability issues, which may require more oversight of the operation of the solar energy systems over time, but may also help ensure circuits remain open or interconnection costs remain low. Interconnection constraints and limits may hamper our ability to sell our offerings in certain markets and increase our costs, adversely affecting our business, operating results, financial condition, and prospects. We expect utility requirements to incorporate these advanced functions provided by the IEEE 1547-2018/UL-1741 SB inverters and that they will become more commonplace. Additional states are expected to adopt the usage of advanced inverters to align with California's anticipated requirement that all new systems use inverters certified to the new UL 1741 SB standard. This requirement became effective in March 2023. All of our vendors are certified to this standard.

Risks Related to Our Business Operations

Our growth depends in part on the success of our relationships with third parties, including our solar partners.

A key component of our growth strategy is to develop or expand our relationships with third parties. For example, we are investing resources in establishing strategic relationships with market players across a variety of industries, including large retailers, to generate new customers. These programs may not roll out as quickly as planned or produce the results we anticipated. A significant portion of our business depends on attracting and retaining new and existing solar partners. Negotiating relationships with our solar partners, investing in due diligence efforts with potential solar partners, training such third parties and contractors, and monitoring them for compliance with our standards require significant time and resources and may present greater risks and challenges than expanding a direct sales or installation team. If we are unsuccessful in establishing or maintaining our relationships with these third parties, our ability to grow our business and address our market opportunity could be impaired. Even if we are able to establish and maintain these relationships, we may not be able to execute on our goal of leveraging these relationships to meaningfully expand our business, brand recognition and customer base. This would limit our growth potential and our opportunities to generate significant additional revenue or cash flows.

We and our solar partners depend on a limited number of suppliers of solar panels, batteries, and other system components to adequately meet anticipated demand for our solar service offerings. Any shortage, bottlenecks, delay, detentions, or component price change from these suppliers, or the acquisition of any of these suppliers by a competitor, could result in sales and installation delays, cancellations, and loss of market share.

We and our solar partners purchase solar panels, inverters, batteries, and other system components from a limited number of suppliers, making us susceptible to quality issues, shortages, bottlenecks, and price changes. If we or our solar partners fail to develop, maintain and expand our relationships with these or other suppliers, we may be unable to adequately meet anticipated demand for our solar service offerings, 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 or our solar partners rely upon to meet anticipated demand ceases or reduces production, we may be unable to quickly identify alternate suppliers or to qualify alternative products on commercially reasonable terms, and we may be unable to satisfy this demand.

The acquisition of a supplier by one of our competitors could also limit our access to such components and require significant redesigns of our solar energy systems or installation procedures and have a material adverse effect on our business.

In particular, there is a limited number of suppliers of inverters, which are components that convert electricity generated by solar panels into electricity that can be used to power the home. For example, once we design a system for use with a particular inverter, if that type of inverter is not readily available at an anticipated price, we may incur delays and additional expenses to redesign the system. Further, the inverters on our solar energy systems generally carry only ten year warranties. If there is an inverter equipment shortage in a year when a substantial number of inverters on our systems need to be replaced, we may not be able to replace the inverters to maintain proper system functioning or may be forced to do so at higher than anticipated prices, either of which would adversely impact our business.

Similarly, there is a limited number of suppliers of batteries. Once we design a system for use with a particular battery, if that type of battery is not readily available from our supplier, we may incur delays and additional expenses to install the system or be forced to redesign the system. Cost and mass production of battery cells depends in part upon the prices and availability of raw materials such as lithium, nickel, cobalt and/or other metals. The prices for these materials fluctuate and their available supply may be unstable, depending on market conditions and global demand for these materials. For example, as a result of increased global production of electric vehicles and energy storage products, global demand has increased for lithium-ion battery cells, which may cause challenges for our battery suppliers, including delays or price volatility. Any such delays or reduced availability of battery cells (or other component materials) may impact our sales and operating results. Further, these risks may increase as market demand for our solar and battery offering grows. Any reduced availability of these batteries may impact our growth, and any increases in their prices may reduce our profitability if we cannot recoup such costs through increased prices. Our inability to meet demand and any product price increases may harm our brand, growth, prospects and operating results.

There have also been periods of industry-wide shortage of key components, including solar panels, batteries and inverters, in times of rapid industry growth or regulatory change. Further, new or unexpected changes in rooftop fire codes or building codes may require new or different system components to satisfy compliance with such newly effective codes or regulations, which may not be readily available for distribution to us or our suppliers. 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 and, as a result, could negatively impact our ability to install systems in a timely manner. Additionally, any decline in the exchange rate of the U.S. dollar compared to the functional currency of our component suppliers could increase our component prices. Any of these shortages, delays or price changes could limit our growth, cause cancellations or adversely affect our operating margins, and result in loss of market share and damage to our brand.

Human rights issues in foreign countries and the U.S. government response to them could also disrupt our supply chain and operations. In particular, the WRO issued by the CBP on June 24, 2021 applicable to certain silica-based products manufactured in the Xinjiang Uyghur Autonomous Region of China, and any other allegations regarding forced labor in China and U.S. trade regulations to prohibit the importation of any goods derived from forced labor, could affect our operations. Further, the Uyghur Forced Labor Prevention Act that President Biden signed into law on December 23, 2021, which took effect on June 21, 2022, has affected, and may continue to affect, our supply chain and operations. Intensive examinations, withhold release orders, and related governmental procedures have resulted in supply chain and operational delays throughout the industry, and we have implemented policies and procedures to maintain compliance and minimize delays. These and other similar trade restrictions that may be imposed in the future could cause delivery and installation delays, and restrict the global supply of polysilicon and solar products. This, coupled with the passage of the IRA, could result in near-term demand for available solar energy systems despite higher costs, as well as increased costs of polysilicon and the overall cost of solar energy systems, potentially reducing overall demand for our products and services.

In addition, our supply chain and operations (or those of our partners) could be subject to events beyond our control, such as earthquakes, wildfires, flooding, hurricanes, tsunamis, typhoons, volcanic eruptions, droughts, tornadoes, the effects of climate change and related extreme weather, public health issues and pandemics, war, terrorism, government restrictions or limitations on trade, and geo-political unrest and uncertainties, such as Russia's invasion of Ukraine and the current armed conflict in Israel and the Gaza Strip. We currently do not, and do not plan to in the future, source any products, materials, components, parts, or services directly from providers in these regions. As a result, we do not anticipate any material impacts to our supply chain directly arising from these conflicts at this time.

As the primary entity that contracts with customers, we are subject to risks associated with construction, cost overruns, delays, customer cancellations, 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 certain communities that we service, and we are ultimately responsible as the contracting party for every solar energy system installation. We may be liable, either directly or through our solar partners, to customers for any damage we cause to them, their home, belongings, or property during the installation of our systems. For example, we, either directly or through our solar partners, frequently penetrate customers' roofs during the installation process and may incur liability for the failure to adequately weatherproof such penetrations following the completion of construction. In addition, because the solar energy systems we or our solar partners deploy are high voltage energy systems, we may incur liability for any failure to comply with electrical standards and manufacturer recommendations.

For example, on December 2, 2020, the California Contractors State License Board (the "CSLB") filed an administrative proceeding against us and certain of our officers related to an accident that occurred during an installation by one of our affiliate channel partners, Horizon Solar Power, which held its own license with the CSLB. On November 8, 2021, the parties entered into a stipulated settlement imposing citations and withdrawing the administrative proceeding with additional conditions. We consistently denied wrongdoing concerning the allegations in the administrative proceeding and made no admissions of wrongdoing incident to the settlement. We could face other similar claims or proceedings in the future, which, if not resolved favorably, could potentially result in fines, public reprimand, probation, or the suspension or revocation of certain of our licenses.

Completing the sale and installation of a solar energy system requires many different steps including a site audit, completion of designs, permitting, installation, electrical sign-off and interconnection. Customers may cancel their Customer Agreement, subject to certain conditions, during this process until commencement of installation,

and we have experienced increased customer cancellations in certain geographic markets during certain periods in our operating history. We or our solar partners may face customer cancellations, delays or cost overruns which may adversely affect our or our solar partners' ability to ramp up the volume of sales or installations in accordance with our plans. These cancellations, delays or overruns may be the result of a variety of factors, such as labor shortages or other labor issues, defects in materials and workmanship, adverse weather conditions, transportation constraints, construction change orders, site changes or roof conditions, geographic factors, extended permitting and inspection times and other unforeseen difficulties or any other factors that may extend the timing to install, any of which could lead to increased cancellation rates, reputational harm and other adverse effects. For example, some customer orders are canceled after a site visit if we determine that a customer needs to make repairs to or install a new roof, or that there is excessive shading on their property. Additionally, as the demand for solar plus storage offerings grows, we anticipate facing additional operational challenges associated with the complexity of deploying storage solutions that tend to have longer cycle times due to factors such as lengthened permitting and inspection times and potential need of a main panel upgrade. Any such factors that extend the timeframes from customer signature to installation or increased project complexity may result in increased operational challenges and correspondingly lower realization rates. If we continue to experience increased customer cancellations, our financial results may be materially and adversely affected. In addition, the current macroeconomic environment, including rising interest rates, instability in financial markets and bank failures, may impact our ability to engage with new customers and expand our relationships with existing customers. If our customers are materially negatively impacted by these factors, our business could be negatively impacted.

Policy can impact solar installation completion timelines. For example, in fall 2022, California passed SB 379, which imposes a required timeline for cities and counties to implement an online, automated solar permitting platform like SolarAPP+. Cities with populations over 50,000 and counties with populations over 150,000 will need to have instant, online, automated residential solar and storage permitting as of September 30, 2023, which may increase the rate at which we install solar systems.

In addition, the installation of solar energy systems and other energy-related products requiring building modifications are 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 and our partners' 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 individual authority having jurisdiction over our installations and to design solar energy systems to comply with these varying standards. Any new 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 solar service offerings.

We have a variety of stringent quality standards that we apply in the selection, supervision, and oversight of our third-party suppliers and solar partners. We exercise oversight over our partners through written agreements requiring compliance with the laws and requirements of all jurisdictions, including regarding safety and consumer protections, by oversight of compliance with these agreements, and enforced by termination of a partner relationship for failure to meet those obligations. However, because our suppliers and partners are third parties, ultimately, we cannot guarantee that they will follow our standards or ethical business practices, such as fair wage practices and compliance with environmental, safety and other local laws, despite our efforts to hold them accountable to our standards. A lack of demonstrated compliance could lead us to seek alternative suppliers or contractors, which could increase our costs and result in delayed delivery or installation of our products, product shortages or other disruptions of our operations. Violation of labor or other laws by our suppliers and solar partners or the divergence of a supplier's or solar partner'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, brand and reputation in the market.

If we fail to manage our recent and future 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 significant growth in recent periods and we intend to continue to expand our business within existing markets, such as Puerto Rico, and in a number of new locations in the future, and with our product offerings, such as EV chargers. This growth has placed, and any future growth may continue to place, a significant strain on our management, operational and financial infrastructure. In particular, we have been in the past, and may in the future, be required to expand, train and manage our growing employee base and solar partners. Our

management will also be required to maintain and expand our relationships with customers, suppliers, and other third parties and attract new customers and suppliers, as well as to manage multiple geographic locations.

In addition, our current and planned operations, personnel, systems and procedures might be inadequate to support our future growth and may require us to make additional unanticipated investment in our infrastructure, including additional costs for the expansion of our employee base and our solar partners as well as marketing and branding costs. 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 growth, we may be unable to take advantage of market opportunities, execute our business strategies or respond to competitive pressures. This could also result in declines in quality or customer satisfaction, increased costs, difficulties in introducing new solar service offerings or other operational difficulties. Any failure to effectively manage growth could adversely impact our business, operating results, financial condition, and reputation.

We typically bear the risk of loss and the cost of maintenance, repair and removal on solar energy systems that are owned or leased by our investment funds.

We typically bear the risk of loss and are generally obligated to cover the cost of maintenance, repair and removal for any solar energy system that we sell or lease to our investment funds. At the time we sell or lease a solar energy system to an investment fund, we enter into a maintenance services agreement where we agree to operate and maintain the system for a fixed fee that is calculated to cover our future expected maintenance costs. If our solar energy systems require an above-average amount 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, more than 45% of which were located in California as of December 31, 2023, are damaged as the result of a natural disaster beyond our control, losses could exceed or be excluded from, our 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. We purchase property insurance with industry standard coverage and limits approved by an investor's third-party insurance advisors to hedge against such risk, but such coverage may not cover our losses.

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

If our solar service offerings, including our racking systems, photovoltaic modules, batteries, inverters, or other products, injured someone, we would be exposed to product liability claims. Because solar energy systems and many of our other current and anticipated products are electricity-producing devices, it is possible that customers or their property could be injured or damaged by our products, whether by product malfunctions, defects, improper installation or other causes. We rely on third-party manufacturing warranties, warranties provided by our solar partners and our general liability insurance to cover product liability claims and have not obtained separate product liability insurance. Our solar energy systems, including our photovoltaic modules, batteries, inverters, and other products, may also be subject to recalls due to product malfunctions or defects. Any product liability claim 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 that could require us to make significant payments, as well as 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 customers, thus affecting our growth and financial performance.

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

As of December 31, 2023, California represented over 45% of our customer base. This concentration of our customer base and operational infrastructure could lead to our business and results of operations being particularly susceptible to adverse economic, regulatory, political, weather and other conditions in this market and in other markets that may become similarly concentrated, in particular the east coast, where we have seen significant growth recently. Recent changes to net metering policy and the tariff structure in California in December 2022 have created additional uncertainty and challenges, given the size of our customer base in California. Originations in California continue to be below levels prior to the NBT transition, and without further increases in originations, our

new installations in California may continue to decline compared to prior periods, which could have a material adverse effect on our business operations and financial performance.

Our corporate and sales headquarters are located in San Francisco, California, an area that has a heightened risk of earthquakes and nearby wildfires. We may not have adequate insurance, including business interruption insurance, to compensate us for losses that may occur from any such significant events. A significant natural disaster, such as an earthquake or wildfire, or a public health crisis, such as a pandemic, or civil unrest could have a material adverse impact on our business, results of operations and financial condition. In addition, acts of terrorism or malicious computer viruses could cause disruptions in our or our solar partners' businesses or the economy as a whole. To the extent that these disruptions result in delays or cancellations of installations or the deployment of our solar service offerings, our business, results of operations and financial condition would be adversely affected.

Changes to the applicable laws and regulations governing direct-to-home sales and marketing may limit or restrict our ability to effectively compete.

We utilize a direct-to-home sales model as a primary sales channel and are vulnerable to changes in laws and regulations 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 and regulations affecting direct sales and marketing are passed in the markets in which we operate, it would take time to train our sales professionals 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, our financial condition, results of operations and growth prospects could be adversely affected.

Expanding and maintaining new sales channels and affiliate channel partner networks could be costly and time-consuming. As we enter new channels and establish new partnerships, we could be at a disadvantage relative to other companies who have more history in these spaces.

As we continue to grow and expand our sales channels and affiliate channel partner networks, we may encounter challenges and additional costs.

With respect to developing our sales channels, such as direct-to-home, homebuilder, retail, and e-commerce channels and adapting to a remote selling model, we have incurred and may continue to incur significant costs. In addition, we may not initially or ever be successful in utilizing these new channels. Furthermore, we may not be able to compete successfully with companies with a historical presence in such channels, and we may not realize the anticipated benefits of entering such channels, including efficiently increasing our customer base and ultimately reducing costs. Entering new channels also poses the risk of conflicts between sales channels. If we are unable to successfully compete in new channels, our operating results and growth prospects could be adversely affected.

If we fail to maintain or expand our affiliate channel partner relationships, we may be unable to adequately meet anticipated demand for our solar service offerings, or we may only be able to offer our systems at higher costs or after delays. Further, if the terms, including geographic scope, exclusivity, pricing, duration, or other key terms of our agreements with our solar partners are substantially altered, it may impact our operational results and financial performance.

Obtaining a sales contract with a potential customer does not guarantee that the potential customer will not decide to cancel or that we will not need to cancel due to a failed inspection, which could cause us to generate no revenue despite incurring costs and adversely affect our results of operations.

Even after we secure a sales contract with a potential customer, we (either directly or through our solar partners) must perform an inspection to ensure the home, including the rooftop, meets our standards and specifications. If the inspection finds repairs to the rooftop are required in order to satisfy our standards and specifications to install the solar energy system, and a potential customer does not want to make such required repairs, we would lose that anticipated sale. In addition, per the terms of our Customer Agreements, a customer maintains the ability to cancel before commencement of installation, subject to certain conditions. Any delay or cancellation of an anticipated sale could materially and adversely affect our financial results, as we may have incurred sales-related, design-related, and other expenses and generated no revenue.

The value of our solar energy systems at the end of the associated term of the lease or PPA may be lower than projected, which may adversely affect our financial performance and valuation.

We depreciate the costs of our solar energy systems over their estimated useful life of 35 years. At the end of the initial typically 20- or 25-year term of the Customer Agreement, customers may choose to purchase their solar energy systems, ask to remove the system at our cost or renew their Customer Agreements. Customers may choose to not renew or purchase for any reason, including pricing, decreased energy consumption, relocation of residence, or switching to a competitor product.

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. If the value in trade or renewal revenue is less than we expect, we may be required to recognize all or some of the remaining unamortized costs. This could materially impair our future results of operations.

We are exposed to the credit risk of customers and payment delinquencies on our accounts receivables.

Our Customer Agreements are typically for 20 or 25 years and require the customer to make monthly payments to us. Accordingly, we are subject to the credit risk of customers. As of December 31, 2023, the average FICO score of our customers under a Customer Agreement with a monthly payment schedule remained at or above 740, which is generally categorized as a “Very Good” credit profile by the Fair Isaac Corporation. However, this may decline to the extent FICO score requirements under future investment funds are relaxed. While customer defaults have been immaterial to date, we expect that the risk of customer defaults may increase as we grow our business. Due to the immaterial amount of customer defaults to date, our reserve for this exposure is minimal, and our future exposure may exceed the amount of such reserves. If we experience increased customer credit defaults, our revenue and our ability to raise new investment funds could be adversely affected. If economic conditions worsen, certain of our customers may face liquidity concerns and may be unable to satisfy their payment obligations to us on a timely basis or at all, which could have a material adverse effect on our financial condition and results of operations.

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

We have in the past and may in the future, acquire companies, Project pipelines, Projects, SRECs, products, or technologies or enter into joint ventures or other strategic transactions. For example, we completed the acquisition of Vivint Solar on October 8, 2020. Also, in July 2020, we announced a venture with SK E&S Co., Ltd. and other affiliated companies focused on home electrification. We may not realize the anticipated benefits of past or future investments, strategic transactions, or acquisitions, and these transactions involve numerous risks that are not within our control. These risks include the following, among others:

- failure to satisfy the required conditions and otherwise complete a planned acquisition, joint venture or other strategic transaction on a timely basis or at all;
- legal or regulatory proceedings, if any, relating to a planned acquisition, joint venture or other strategic transaction and the outcome of such legal proceedings;
- difficulty in assimilating the operations, systems, and personnel of the acquired company, especially given our unique culture;
- difficulty in effectively integrating the acquired technologies or products with our current products and 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 results of operations;

- significant post-acquisition investments which may lower the actual benefits realized through the acquisition;

- potential failure of the due diligence processes to identify significant issues with product quality, legal, and financial liabilities, among other things;

- moderating and anticipating the impacts of inherent or emerging seasonality in acquired customer agreements;

- 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.

Our failure to address these risks, or other problems encountered in connection with our past or future investments, strategic transactions, or acquisitions, could cause us to fail to realize the anticipated benefits of these acquisitions or investments, cause us to incur unanticipated liabilities, and harm our business generally. Future acquisitions could also result in dilutive issuances of our equity securities, the incurrence of debt, contingent liabilities, amortization expenses, incremental expenses or the write-off of goodwill, any of which could harm our financial condition or results of operations, and the trading price of our common stock could decline.

From time to time, we may pursue acquisitions of previously installed solar systems to further expand future solar and storage upsell and retrofit opportunities. While we do not expect such acquisitions to represent a material portion of our growth on an annual basis, we plan to pursue such transactions opportunistically. We may not realize the anticipated benefits of such transactions, and these transactions involve numerous risks that are not within our control.

Mergers and acquisitions are inherently risky, may not produce the anticipated benefits and could adversely affect our business, financial condition or results of operations.

If we are unsuccessful in developing and maintaining our proprietary technology, including our BrightPath software, our ability to attract and retain solar partners could be impaired, our competitive position could be harmed and our revenue could be reduced.

Our future growth depends on our ability to continue to develop and maintain our proprietary technology that supports our solar service offerings, including our design and proposal software, BrightPath. In addition, we rely, and expect to continue to rely, on licensing agreements with certain third parties for aerial images that allow us to efficiently and effectively analyze a customer's rooftop for solar energy system specifications. In the event that our

current or future products require features that we have not developed or licensed, or we lose the benefit of an existing license, we will be required to develop or obtain such technology through purchase, license or other arrangements. If the required technology is not available on commercially reasonable terms, or at all, we may incur additional expenses in an effort to internally develop the required technology. In addition, our BrightPath software was developed, in part, with U.S. federal government funding. When new technologies are developed with U.S. government funding, the government obtains certain rights in any resulting patents, including a nonexclusive license authorizing the government to use the invention for non-commercial purposes. These rights may permit the government to disclose certain confidential information related to BrightPath to third parties and to exercise "march-in" rights to use or allow third parties to use our patented technology. We are also subject to certain reporting and other obligations to the U.S. government in connection with funding for BrightPath. If we are unable to maintain our existing proprietary technology, our ability to attract and retain solar partners could be impaired, our competitive position could be harmed and our revenue could be reduced.

Disruptions to our solar production metering solution could negatively impact our revenue and increase our expenses.

Our ability to monitor solar energy production for various purposes depends on the operation of our metering solution. We could incur significant expense and disruption to our operations in connection with failures of our metering solution, including meter hardware failures and failure or obsolescence of the cellular technology that we use to communicate with those meters. For example, many of our meters operate on either the 3G or 4G cellular data networks, which are expected to sunset before the term of our Customer Agreements, and newer technologies we use today may become obsolete before the end of the term of Customer Agreements entered into now. Upgrading our metering solution may cause us to incur significant expense. Additionally, our meters communicate data through proprietary software, which we license from our metering partners. Should we be unable to continue to license, on agreeable terms, the software necessary to communicate with our meters, it could cause a significant disruption in our business and operations.

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

Customers who enter into Customer Agreements with us are covered by production guarantees and roof penetration warranties. As the owners of the solar energy systems, we or our investment funds receive a warranty from the inverter and solar panel manufacturers, and, for those solar energy systems that we do not install directly, we receive workmanship and material warranties as well as roof penetration warranties from our solar partners. Furthermore, one or more of our third-party manufacturers or solar partners could cease operations and no longer honor these warranties, leaving us to fulfill these potential obligations to customers, or such warranties may be limited in scope and amount, and may be inadequate to protect us. We also provide a performance guarantee with certain solar service offerings pursuant to which we compensate customers on an annual basis if their system does not meet the electricity production guarantees set forth in their agreement with us. Customers who enter into Customer Agreements with us are covered by production guarantees equal to the length of the term of these agreements, typically 20 or 25 years. We may suffer financial losses associated if significant performance guarantee payments are triggered.

Because of our limited operating history and the length of the term of our Customer Agreements, 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. 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 production guarantees. Product failures or operational deficiencies also would reduce our revenue from power purchase or lease agreements because they are dependent on system production. Any widespread product failures or operating deficiencies may damage our market reputation and adversely impact our financial results.

Our business may be harmed if we fail to properly protect our intellectual property, and we may also be required to defend against claims or indemnify others against claims that our intellectual property infringes on the intellectual property rights of third parties.

We believe that the success of our business depends in part on our proprietary technology, including our software, information, processes and know-how. We rely on copyright, trade secret and patent protections to secure our intellectual property rights. Although we may incur substantial costs in protecting our technology, we cannot be certain that we have adequately protected or will be able to adequately protect it, that our competitors will not be able to utilize our existing technology or develop similar technology independently, that the claims allowed with respect to any patents held by us will be broad enough to protect our technology or that foreign intellectual property laws will adequately protect our intellectual property rights. Moreover, we cannot be certain that our patents provide us with a competitive advantage. Despite our precautions, it may be possible for third parties to obtain and use our intellectual property without our consent. Unauthorized use of our intellectual property by third parties, and the expenses incurred in protecting our intellectual property rights, may adversely affect our business. In the future, some of our products could be alleged to infringe existing patents or other intellectual property of third parties, and we cannot be certain that we will prevail in any intellectual property dispute. In addition, any future litigation required to enforce our patents, to protect our trade secrets or know-how or to defend us or indemnify others against claimed infringement of the rights of third parties could harm our business, financial condition, and results of operations.

We use "open source" software in our solutions, which may require that we release the source code of certain software subject to open source licenses or introduce vulnerabilities into our software that could become exploitable and expose sensitive data, either of which could subject us to possible litigation or other actions that could adversely affect our business.

We utilize 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. However, our use 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, which could introduce vulnerabilities that could be exploited and lead to the loss of sensitive or protected data. 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 the source code of our proprietary software to the public. This would allow our competitors to create similar offerings with lower development effort and time.

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 require us to devote additional research and development resources to change our software, any of which would have a negative effect on our business and results of operations. 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 use of these solutions if re-engineering cannot be accomplished on a timely basis. 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 use our proprietary software. We cannot guarantee that we have incorporated or will incorporate 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.

Any security breach, unauthorized access or disclosure, or theft of data, including personal information, we, our third-party service providers, and suppliers gather, store, transmit, and use, or other hacking, cyber-attack, phishing attack, and unauthorized intrusions into or through our systems or those of our third party service providers, could harm our reputation, subject us to claims, litigation, financial harm, and have an adverse impact on our business.

In the ordinary course of business, we, our third-party providers upon which we rely, and our suppliers collect, receive, store, transmit, process, and use proprietary, confidential, and sensitive data, including the personal information of customers, such as names, addresses, email addresses, credit information and other housing and energy use information, as well as the personal information of our employees. Unauthorized disclosure of such proprietary, confidential, or sensitive data, including personal information, whether through a breach of our or those of our third-party service providers and suppliers systems by an unauthorized party, including, but not limited to hackers, threat actors, sophisticated nation-states, nation-state-supported actors, personnel theft or misuse of information, or otherwise, could harm our business. Some actors now engage and are expected to continue to engage in cyber-attacks, including without limitation nation-state actors for geopolitical reasons and in conjunction with military conflicts and defense activities. During times of war and other major conflicts, we, the third parties upon which we rely, and our customers may be vulnerable to a heightened risk of these attacks, including retaliatory

cyber-attacks, that could materially disrupt our systems and operations, supply chain, and ability to produce, sell and distribute our goods and services.

In addition, we, our third-party service providers upon which we rely, and our suppliers may be subject to a variety of evolving threats, such as computer malware (including as a result of advanced persistent threat intrusions), ransomware, malicious code (such as viruses or worms), social engineering (including through deep fakes, which may be increasingly more difficult to identify as fake, and phishing attacks), telecommunications failures, natural disasters and extreme weather events, general hacking, and other similar threats. Cybersecurity incidents have become more prevalent, and could occur on our systems and those of our third parties in the future. Our team members who work remotely pose increased risks to our information technology systems and data, because many of them utilize less secure network connections outside our premises.

Applicable data privacy and security obligations may require us to notify relevant stakeholders, including affected individuals, customers, regulators, and investors, of security incidents. Such disclosures are costly, and the disclosure or the failure to comply with such requirements could lead to adverse consequences. Inadvertent disclosure of confidential data, such as personal information, or if a third party were to gain unauthorized access to this type of data in our possession, has resulted in, and could result in future claims or litigation arising from damages suffered by those affected, government enforcement actions (for example, investigations, fines, penalties, audits, and inspections), additional reporting requirements and/or oversight, indemnification obligations, reputational harm, interruptions in our operations, financial loss, and other similar harms. In addition, we could incur significant costs in complying with the multitude of federal, state and local laws, and applicable independent security control frameworks, regarding the unauthorized disclosure of personal information. While we have implemented security measures designed to protect against security incidents, there can be no assurance that these measures will be effective. Finally, any perceived or actual unauthorized disclosure of such information, unauthorized intrusion, or other cyberthreat could harm our reputation, substantially impair our ability to attract and retain customers, interrupt our operations, and have an adverse impact on our business.

We rely on third-party service providers and technologies to operate critical business systems to process sensitive information in a variety of contexts, including, without limitation, cloud-based infrastructure, encryption and authentication technology, employee email, and other functions. Our ability to monitor these third parties' information security practices is limited, and these third parties may not have adequate information security measures in place. If our third-party service providers experience a security incident or other interruption, we could experience adverse consequences. While we may be entitled to damages if our third-party service providers fail to satisfy their privacy or security-related obligations to us, any award may be insufficient to cover our damages, or we may be unable to recover such award.

Our contracts may not contain limitations of liability, and even where they do, there can be no assurance that limitations of liability in our contracts are sufficient to protect us from liabilities, damages, or claims related to our data privacy and security obligations. While we currently maintain cybersecurity insurance, such insurance may not be sufficient to cover us against claims, and we cannot be certain that cyber insurance will continue to be available to us on economically reasonable terms, or at all, or that any insurer will not deny coverage as to any future claim.

We are, and may become, subject to stringent and evolving U.S. and foreign laws, regulations, and rules, contractual obligations, industry standards, policies and other obligations related to data privacy and security. Many of these laws and regulations are subject to change and uncertain interpretation, and could result in claims, increased cost of operations, or otherwise harm our business.

In the ordinary course of business, we process personal data and other sensitive information, including proprietary and confidential business data, trade secrets, intellectual property, and sensitive third-party data. Our data processing activities subject us to numerous data privacy and security obligations, such as various laws, regulations, guidance, industry standards, external and internal privacy and security policies, contractual requirements, and other obligations relating to data privacy and security. Obligations related to data privacy and security (and consumers' data privacy expectations) are quickly changing, becoming increasingly stringent, and creating uncertainty. Additionally, these obligations may be subject to differing applications and interpretations, which may be inconsistent or conflict among jurisdictions. Preparing for and complying with these obligations requires us to devote significant resources, which may necessitate changes to our services, information technologies, systems, and practices, and to those of any third parties that process personal data on our behalf.

In the United States, federal, state, and local governments have enacted numerous data privacy and security laws, including data breach notification laws, personal data privacy laws, consumer protection laws, and other similar laws. For example, the Telephone Consumer Protection Act of 1991 ("TCPA") imposes various consumer consent requirements and other restrictions on certain telemarketing activity and other communications with

consumers by phone, fax, or text message, and violations of the TCPA violations can result in significant financial penalties, including penalties or criminal fines imposed by the Federal Communications Commission.

In the past few years, numerous U.S. states—including California, Colorado, and Connecticut —have enacted comprehensive data privacy and security laws that impose certain obligations on covered businesses, including providing specific disclosures in privacy notices and affording residents with certain rights concerning their personal data. As applicable, such rights may include the right to access, correct, or delete certain personal data, and to opt-out of certain data processing activities, such as targeted advertising, profiling, and automated decision-making. The exercise of these rights may impact our business and ability to provide our products and services. Certain states also impose stricter requirements for processing certain personal data, including sensitive information. These state laws allow for statutory fines for noncompliance. For example, the CCPA applies to personal data of consumers, business representatives, and employees who are California residents, and requires businesses to provide specific disclosures in privacy notices and honor requests of such individuals to exercise certain privacy rights. The CCPA provides for fines of up to $7,500 per intentional violation and allows private litigants affected by certain data breaches to recover significant statutory damages. These developments further complicate compliance efforts, and increase legal risk and compliance costs for us, the third parties upon whom we rely, and our customers.

We may at times fail (or be perceived to have failed) in our efforts to comply with our data privacy and security obligations. Moreover, despite our efforts, our personnel or third parties on whom we rely may fail to comply with such obligations, which could negatively impact our business operations. If we or the third parties on which we rely fail, or are perceived to have failed, to address or comply with applicable data privacy and security obligations, we could face significant consequences, including but not limited to: government enforcement actions (e.g., investigations, fines, penalties, audits, inspections), litigation (including class-action claims), additional reporting requirements and/or oversight, bans on processing personal data, and orders to destroy or not use personal data.

Information technology systems are a critical component of our long-term competitive strategy, and if we fail to timely and responsibly implement, adopt, and innovate in response to rapidly evolving technological developments, including the use of artificial intelligence, our ability to compete, financial condition, and operating results could be adversely impacted.

Our ability to compete effectively requires our continued investment in technology to ensure we provide ongoing value to our current and potential customers and operate efficiently. However, there are many uncertainties in newly emerging technologies and if we are unable to integrate and introduce new technologies, products, and services effectively, our ability to compete may be adversely affected and our business could be materially harmed.

Whether we compete effectively may also be impacted by our ability to accurately anticipate and effectively respond to the risks and opportunities presented by the disruptions and developments of emerging and newly available technologies, including artificial intelligence ("AI"). We may not be successful in anticipating or responding to these developments on a timely and cost-effective basis, and if the rate at which we adopt and the ways in which we apply new technologies lags or differs negatively in meaningful ways from our competitors, our business could be adversely affected.

In particular, generative AI and other new and emerging technologies present a number of inherent risks and incorporating them into our information technology infrastructure, products, and services responsibly is crucial to maintaining and strengthening our competitive position in the market. For example, AI technologies may create unintended biases, accuracy issues, and discriminatory outcomes that could lead to errors in our decision-making, product development or other business activities, which could have a negative impact on our business, operating results and financial condition. Further, the unauthorized use of AI technologies by our employees, third-party providers, or our suppliers pose additional risks relating to data privacy and security, including the potential exposure of our confidential information to unauthorized recipients. Use of AI tools could result in future claims or litigation related to unauthorized access to or use of confidential information and failure to comply with open source software requirements.

Damage to our brand and reputation or failure to expand our brand would harm our business and results of operations.

We depend significantly on our brand and reputation for high-quality solar service offerings, engineering and customer service to attract customers and grow our business. If we fail to continue to deliver our solar service offerings within the planned timelines, if our solar service offerings do not perform as anticipated or if we damage any customers' properties or cancel Projects, our brand and reputation could be significantly impaired. We also depend greatly on referrals from customers for our growth. Therefore, our inability to meet or exceed customers' expectations would harm our reputation and growth through referrals. We have at times focused particular attention on expeditiously growing our direct sales force and our solar partners, leading us in some instances to hire personnel or partner with third parties who we may later determine do not fit our company culture and standards. Given the sheer volume of interactions our direct sales force and our solar partners have with customers and potential customers, it is also unavoidable that some interactions will be perceived by customers and potential customers as less than satisfactory and result in complaints. If we cannot manage our hiring and training processes to limit potential issues and maintain appropriate customer service levels, our brand and reputation may be harmed and our ability to grow our business would suffer. In addition, if we were unable to achieve a similar level of brand recognition as our competitors, some of which may have a broader brand footprint, more resources and longer operational history, we could lose recognition in the marketplace among prospective customers, suppliers and partners, which could affect our growth and financial performance. Our growth strategy involves marketing and branding initiatives that will involve incurring significant expenses in advance of corresponding revenue. We cannot assure you that such marketing and branding expenses will result in the successful expansion of our brand recognition or increase our revenue. We are also subject to marketing and advertising regulations in various jurisdictions, and overly restrictive conditions on our marketing and advertising activities may inhibit the sales of the affected products.

A failure to hire and retain a sufficient number of employees and service providers in key functions would constrain our growth and our ability to timely complete customers' projects and successfully manage customer accounts.

To support our growth, we need to hire, train, deploy, manage and retain a substantial number of skilled employees, engineers, installers, electricians, sales and project finance specialists. Competition for qualified personnel in our industry is increasing, particularly for skilled personnel involved in the installation of solar energy systems. We have in the past been, and may in the future be, unable to attract or retain qualified and skilled installation personnel or installation companies to be our solar partners, which would have an adverse effect on our business. We and our solar partners also compete with the homebuilding and construction industries for skilled labor. As these industries grow and seek to hire additional workers, our cost of labor may increase. The unionization of the industry's labor force could also increase our labor costs. Shortages of skilled labor could significantly delay a project or otherwise increase our costs. Because our profit on a particular installation is based in part on assumptions as to the cost of such a project, cost overruns, delays or other execution issues may cause us to not achieve our expected margins or cover our costs for that project. In addition, because we are headquartered in the San Francisco Bay Area, we compete for a limited pool of technical and engineering resources that requires us to pay wages that are competitive with relatively high regional standards for employees in these fields. Further, we need to continue to expand upon the training of our customer service team to provide high-end account management and service to customers before, during and following the point of installation of our solar energy systems. Identifying and recruiting qualified personnel and training them requires significant time, expense and attention. It can take several months before a new customer service team member is fully trained and productive at the standards that we have established. If we are unable to hire, develop and retain talented technical and customer service personnel, we may not be able to realize the expected benefits of this investment or grow our business.

In addition, to support the growth and success of our direct-to-consumer channel, we need to recruit, retain and motivate a large number of sales personnel on a continuing basis. We compete with many other companies for qualified sales personnel, and it could take many months before a new salesperson is fully trained on our solar service offerings. If we are unable to hire, develop and retain qualified sales personnel or if they are unable to achieve desired productivity levels, we may not be able to compete effectively.

If we or our solar partners cannot meet our hiring, retention and efficiency goals, we may be unable to complete customers' Projects on time or manage customer accounts 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.

Regulators may limit the type of electricians qualified to install and service our solar and battery systems in California, which may result in workforce shortages, operational delays, and increased costs.

In June 2023, the CSLB initiated a formal rule proposal to allow solar installers (C-46 license holders) to continue to install energy storage systems less than 80 kWh when "incidental and supplemental" to the installation of a PV system, but would require the use of a C-10 license holder for repair and retrofit work. The proposed rule is subject to notice and comment procedures and is still pending. The energy storage systems that we install in the residential market typically do not exceed 80 kWh.

While our workforce includes workers operating under both C-10 and C-46 licenses in California, there are a limited number of C-10 certified electricians in the state, which may result in workforce shortages, operational delays, and increased costs. Obtaining a C-10 license can be an extended process, and the timing and cost of having a large number of our C-46 licensed electricians seek such additional qualification is unclear.

A significant portion of our customer base is in California, and as the state deals with growing wildfire risk and grid instability, an increasing number of our customers are choosing our solar and battery offerings. If we are unable to hire, develop and retain sufficient certified electricians, our growth of solar and battery customers in California may be significantly constrained, which would negatively impact our operating results.

Our workforce has led the industry in safely installing solar and battery systems for tens of thousands of customers across the country, and we intend to work with regulators, industry partners, and stakeholders to grow the solar and battery market throughout California.

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

We depend on our experienced management team, and the loss of one or more key executives could have a negative impact on our business. With any change in leadership, there is a risk to organizational effectiveness and employee retention as well as the potential for disruption to our business. None of our key executives or our key employees are bound by employment agreements for any specific term, and we may be unable to replace key members of our management team and key employees in the event we lose their services. Integrating new employees into our management 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, and results of operations.

We are subject to legal proceedings, regulatory inquiries and litigation, and we have previously been, and may in the future be, named in additional legal proceedings, become involved in regulatory inquiries or be subject to litigation in the future, all of which are costly, distracting to our core business and could result in an unfavorable outcome, or a material adverse effect on our business, financial condition, results of operations, or the trading price for our securities.

We are involved in legal proceedings and receive inquiries from government and regulatory agencies from time to time. In the event that we are involved in significant disputes or are the subject of a formal action by a regulatory agency, we could be exposed to costly and time-consuming legal proceedings that could result in any number of outcomes. Although outcomes of such actions vary, any current or future claims or regulatory actions initiated by or against us, whether successful or not, could result in significant costs, costly damage awards or settlement amounts, injunctive relief, increased costs of business, fines or orders to change certain business practices, significant dedication of management time, diversion of significant operational resources, or otherwise harm our business.

If we are not successful in our legal proceedings and litigation, we may be required to pay significant monetary damages, which could hurt our results of operations. Lawsuits are time-consuming and expensive to resolve and divert management's time and attention. Although we carry general liability insurance, our insurance may not cover potential claims or may not be adequate to indemnify us for all liability that may be imposed. We cannot predict how the courts will rule in any potential lawsuit against us. Decisions in favor of parties that bring lawsuits against us could subject us to significant liability for damages, adversely affect our results of operations and harm our reputation.

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 involves transactions with customers. We and our solar partners must comply with numerous federal, state and local laws and regulations that govern matters relating to our interactions with customers, including those pertaining to data privacy and security, consumer financial and credit transactions, home improvement contracts, warranties and direct-to-home solicitation, along with certain rules and regulations specific to the marketing and sale of residential solar products and services. These laws and regulations are dynamic and subject to potentially differing interpretations, and various federal, state and local legislative and regulatory bodies may 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. 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. Noncompliance with any such laws or regulations, or the perception that we or our solar partners have violated such laws or regulations or engaged in deceptive practices that could result in a violation, could also expose us to claims, proceedings, litigation and investigations 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 such laws and regulations, and increased regulation of matters relating to our interactions with residential customers could 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.

Any investigations, actions, adoption or amendment of regulations relating to the marketing of our products to residential consumers could divert management's attention from 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 professionals and other personnel will always comply with our standard practices and policies, as well as applicable laws and regulations. In any of the numerous interactions between our sales professionals or other personnel and our customers or potential customers, our sales professionals or other personnel may, without our knowledge and despite our efforts to effectively train them and enforce compliance, engage in conduct that is or may be prohibited under our standard practices and policies and applicable laws and regulations. Any such non-compliance, or the perception of non-compliance, has exposed us to claims and could expose us to additional claims, proceedings, litigation, investigations, or enforcement actions by private parties or regulatory authorities, as well as substantial fines and negative publicity, each of which may materially and adversely affect our business and reputation. We have incurred, and will continue to incur, significant expenses to comply with the laws, regulations and industry standards that apply to us.

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

The installation of solar energy systems requires our employees and employees of our solar partners to work with complicated and potentially dangerous electrical and utility systems. The evaluation and installation of our energy-related products also require these employees to work in locations that may contain potentially dangerous levels of asbestos, lead or mold or other substances. We also maintain large fleets of vehicles that these employees use in the course of their work. There is substantial risk of serious illness, injury, or death if proper safety procedures are not followed. Our operations are subject to regulation under OSHA and equivalent state laws. Changes to OSHA 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 illness, 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. Any accidents, citations, violations, illnesses, 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.

If our products do not work as well as planned or if we are unsuccessful in developing and selling new products or in penetrating new markets, our business, financial condition, and results of operations could be adversely affected.

Our success and ability to compete are dependent on the products that we have developed or may develop in the future. There is a risk that the products that we have developed or may develop may not work as intended, or that the marketing of the products may not be as successful as anticipated. The development of new products generally requires substantial investment and can require long development and testing periods before they are commercially viable. We intend to continue to make substantial investments in developing new products and it is possible that we may not develop or acquire new products or product enhancements that compete effectively within our target markets or differentiate our products based on functionality, performance or cost and thus our new technologies and products may not result in meaningful revenue. In addition, any delays in developing and releasing new or enhanced products could cause us to lose revenue opportunities and potential customers. Any technical flaws in product releases could diminish the innovative impact of our products and have a negative effect on customer adoption and our reputation. If we fail to introduce new products that meet the demands of our customers or target markets or do not achieve market acceptance, or if we fail to penetrate new markets, our business, financial conditions and results of operations could be adversely affected.

We have incurred losses and may be unable to sustain profitability in the future.

We have incurred net losses in the past and may continue to incur net losses as we increase our spending to finance the expansion of our operations, expand our installation, engineering, administrative, sales and marketing staffs, increase spending on our brand awareness and other sales and marketing initiatives, make significant investments to drive future growth in our business and implement internal systems and infrastructure to support our growth. We do not know whether our revenue will grow rapidly enough to absorb these costs and our limited operating history makes it difficult to assess the extent of these expenses or their impact on our results of operations. Our ability to sustain profitability depends on a number of factors, including but not limited to:

- growing our customer base;
- reducing our operating costs by lowering our customer acquisition costs and optimizing our design and installation processes and supply chain logistics;
- finding investors willing to invest in our investment funds on favorable terms;
- maintaining or further lowering our cost of capital;
- reducing the cost of components for our solar service offerings;
- growing and maintaining our affiliate channel partner network;
- maintaining high levels of product quality, performance, and customer satisfaction; and
- growing our direct-to-consumer business to scale.

Even if we do sustain profitability, we may be unable to achieve positive cash flows from operations in the future.

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

Our quarterly results of operations are difficult to predict and may fluctuate significantly in the future. We have experienced seasonal and quarterly fluctuations in the past and expect these fluctuations to continue. However,

given that we are operating in a rapidly changing industry, those fluctuations may be masked by our recent growth rates and thus may not be readily apparent from our historical results of operations. As such, our past quarterly results of operations may not be good indicators of likely future performance.

In addition to the other risks described in this “Risk Factors” section, as well as the factors discussed in the “Management’s Discussion and Analysis of Financial Condition and Results of Operations” section, the following factors, among others, could cause our results of operations and key performance indicators to fluctuate:

- the expiration, reduction or initiation of any governmental tax rebates, tax exemptions, or incentives;
- significant fluctuations in customer demand for our solar service offerings or fluctuations in the geographic concentration of installations of solar energy systems;
- changes in financial markets, which could restrict our ability to access available and cost-effective financing sources;
- seasonal, environmental or weather conditions that impact sales, energy production, and system installations;
- the amount and timing of operating expenses related to the maintenance and expansion of our business, operations and infrastructure;
- announcements by us or our competitors of new products or services, 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 utilities;
- changes in regulatory policy related to solar energy generation;
- the loss of one or more key partners or the failure of key partners to perform as anticipated;
- actual or anticipated developments in our competitors’ businesses or the competitive landscape;
- actual or anticipated changes in our growth rate;
- general economic, industry and market conditions beyond our control, such as bank failures, the COVID-19 pandemic, inflationary pressures, other macroeconomic factors, and associated economic downturn; and
- changes to our cancellation rate.

In the past, we have experienced seasonal fluctuations in sales and installations, particularly in the fourth quarter. This has been the result of decreased sales through the holiday season and weather-related installation delays. Our incentives revenue is also highly variable due to associated revenue recognition rules, as discussed in greater detail in Management's Discussion and Analysis of Financial Condition and Results of Operations. Seasonal and other factors may also contribute to variability in our sales of solar energy systems and product sales. 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 or key operating metrics in one or more future quarters may fall short of the expectations of investors and financial analysts. If that occurs, the trading price of our common stock could decline and you could lose part or all of your investment.

Our actual financial results may differ materially from any guidance we may publish from time to time.

We have in the past provided, and may from time to time provide, guidance regarding our future performance that represents our management's estimates as of the date such guidance is provided. Any such guidance is based upon a number of assumptions with respect to future business decisions (some of which may change) and estimates that, while presented with numerical specificity, are inherently subject to significant business, economic, and competitive uncertainties and contingencies (many of which are beyond our control, including those related to the COVID-19 pandemic, inflationary pressures, geopolitical conflict, bank failures, other macroeconomic factors, and associated economic downturn). Guidance is necessarily speculative in nature, and it can be expected that some or all of the assumptions that inform such guidance will not materialize or will vary significantly from actual results. Our ability to meet deployment volume, cost, net present value or any other forward-looking guidance is impacted by a number of factors including, but not limited to, the number of our solar energy systems purchased outright versus the number of our solar energy systems that are subject to long-term Customer Agreements, changes in installation costs, the availability of additional financing on acceptable terms, changes in the retail prices of traditional utility generated electricity, the availability of rebates, tax credits and other incentives, changes in policies and regulations including net metering and interconnection limits or caps, the availability of solar panels and other raw materials, as well as the other risks to our business that are described in this section. Accordingly, our guidance is only an estimate of what management believes is realizable as of the date such guidance is provided. Actual results may vary from such guidance and the variations may be material. Investors should also recognize that the reliability of any forecasted financial data diminishes the farther in the future that the data is forecast. In light of the foregoing, investors should not place undue reliance on our financial guidance, and should carefully consider any guidance we may publish in context.

The requirements of being a public company may strain our resources, divert management's attention and affect our ability to attract and retain qualified board members and officers.

We are subject to the reporting requirements of the Exchange Act, the listing requirements of the Nasdaq Stock Market and other applicable rules and regulations, including, among other requirements, U.S. laws regarding requirements to disclose efforts to identify the origin and existence of certain "conflict minerals." Compliance with these rules and regulations has increased our legal and financial compliance costs, made some activities more difficult, time-consuming or costly and increased demand on our systems and resources. The Exchange Act requires, among other things, that we file annual, quarterly and current reports with respect to our business and results of operations and maintain effective disclosure controls and procedures and internal controls over financial reporting. Maintaining our disclosure controls and procedures and internal controls over financial reporting in accordance with this standard requires significant resources and management oversight. As a result, management's attention may be diverted from other business concerns, which could harm our business and results of operations. Although we have already hired additional employees to comply with these requirements, we may need to hire more employees in the future, which will increase our costs and expenses.

Risks Related to Taxes and Accounting

Our ability to provide our solar service offerings to customers on an economically viable basis depends in part on our ability to finance these systems with fund investors who seek particular tax and other benefits.

Our solar service offerings have been eligible for federal investment tax credits, U.S. Treasury grants, and other tax benefits. We have relied on, and will continue to rely on, tax equity investment funds, which are financing structures that monetize a substantial portion of those benefits, in order to finance our solar service offerings. If, for any reason, we are unable to continue to monetize those benefits through these arrangements, we may be unable to provide and maintain our solar service offerings for customers on an economically viable basis.

The availability of this tax-advantaged financing depends upon many factors, including:

- our ability to compete with other solar energy companies for the limited number of potential 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

- legislative or regulatory changes or decreases to these incentives, including forthcoming final regulations from the U.S. Treasury regarding the Section 48 investment tax credit and the "tech-neutral" Section 48E Clean Electricity Investment Tax Credit.

The federal government currently offers a Commercial ITC under Section 48(a) of the Code, for the installation of certain energy properties, including solar power and storage facilities owned for business purposes. The Commercial ITC was extended and expanded upon by the IRA, which was signed into law by President Biden on August 16, 2022. The IRA also created several ITC "bonus credits" to further incentivize various types of solar and storage facilities.

Our inability to operationalize these tax credits, avail ourselves of IRA benefits in a timely fashion, or ensure the facilities we intend to qualify under the ITC bonus credits satisfy the applicable requirements could impact our ability to compete, and compromise or eliminate opportunities to financially benefit from these tax credits, which would adversely impact our business. The U.S. Department of the Treasury is in various stages of issuing guidance on the ITC bonus credits. On August 10, 2023, the Treasury issued a final rule for the Low-Income Communities Bonus Credit Program under Section 48(e) of the Internal Revenue Code, and it is currently reviewing applications for it, along with the U.S. Department of Energy.

In addition, the U.S. Treasury issued initial guidance on the Energy Community Bonus Credit (Notice 2023-29) on April 4, 2023, followed by additional guidance on June 15, 2023 (Notice 2023-47). Finally, the U.S. Treasury issued guidance on the Domestic Content Bonus Credit (Notice 2023-38) on May 12, 2023. Our ability to use this bonus credit will depend in part on the extent to which our equipment suppliers and financing partners have confidence in the potentially burdensome, complicated regulations.

Forthcoming further regulations and guidance on the ITC bonus credits and allocation process will be necessary to determine whether, to what extent, and when we may benefit from the bonus credits, and our ability to incorporate them into our business operations, which will be further impacted by when the U.S. Treasury promulgates additional guidance and the official regulations. The U.S. Treasury is expected to issue final rules on the Energy Communities Bonus Credit and the Domestic Content Bonus Credit in 2024 or early 2025.

The federal government also currently offers a Residential Clean Energy Credit, for the installation of certain solar power facilities owned by residential taxpayers, which is applicable to customers who purchase a solar energy system outright as opposed to entering into a Customer Agreement.

We and our tax equity partners have claimed and expect to continue to claim ITCs with respect to qualifying solar energy projects. However, the application of law and guidance regarding ITC eligibility to the facts of particular solar energy projects is subject to a number of uncertainties, in particular with respect to the new IRA provisions for which U.S. Treasury regulations ("Treasury Regulations") will continue to be forthcoming, and there can be no assurance that the IRS will agree with our approach in the event of an audit. The U.S. Treasury is expected to continue issuing Treasury Regulations and additional guidance with respect to the application of the newly enacted IRA provisions, and the IRS and U.S. Treasury may modify existing guidance, possibly with retroactive effect. For example, on November 17, 2023 the U.S. Treasury published a Notice of Proposed Rulemaking ("NPRM") titled "Definition of Energy Property and Rules Applicable to the Energy Credit," which will update the rules and regulations of the Section 48 ITC. Any of the foregoing items could reduce the amount of ITCs available to us and our tax equity partners. In this event, we could be required to indemnify tax equity partners for disallowed ITCs, adjust the terms of future tax equity partnerships, or seek alternative sources of funding for solar energy projects, each of which could have a material adverse effect on our business, financial condition, results of operations and prospects.

Future reductions in the Commercial ITC and any further legislative reductions or changes to the Commercial ITC may impact the attractiveness of solar energy to certain tax equity investors and could potentially harm our business. Obtaining tax equity funding (and tax equity funding on advantageous terms) also may become more challenging. Additionally, the benefits of the Commercial ITC have historically enhanced our ability to provide competitive pricing for customers. Reductions in, eliminations of or expirations of governmental incentives such as the Residential Clean Energy Credit could reduce the number of customers who choose to purchase our solar energy systems.

Additionally, potential investors must remain satisfied that the structures that we offer make the tax benefits associated with solar energy systems available to these investors, which depends on the investors' assessment of

the tax law, the absence of any unfavorable interpretations of that law and the continued application of existing tax law and interpretations to our funding structures. Changes in existing law or interpretations of existing law by the IRS and/or the courts could reduce the willingness of investors to invest in funds associated with these solar energy systems. Moreover, reductions to the corporate tax rate may reduce the appetite for tax benefits overall, which could reduce the pool of available funds. Accordingly, we cannot provide assurances that this type of financing will continue to be available to us. New investment fund structures or other financing mechanisms may become available, but if we are unable to take advantage of these fund structures and financing mechanisms, we may be at a competitive disadvantage. If, for any reason, we are unable to finance our solar service offerings through tax-advantaged structures or if we are unable to realize or monetize Commercial ITCs or other tax benefits, we may no longer be able to provide our solar service offerings to new customers on an economically viable basis, which would have a material adverse effect on our business, financial condition, and operations.

If the IRS makes determinations that the creditable basis of our solar energy systems is materially lower than what we have claimed, we may have to pay significant amounts to our fund investors, and our business, financial condition, and prospects may be materially and adversely affected.

We and our fund investors claim the Commercial ITC in amounts based on the purchase price paid by our funds for our solar energy systems (*i.e.*, the funds' basis in the solar energy systems, or creditable basis). Such purchase prices are based on the fair market value of our systems as determined pursuant to independent appraisals obtained by us. With respect to Commercial ITCs, the IRS may on audit determine that the creditable basis for our solar energy systems is lower than the amount determined by the appraisal and accordingly argue that the tax credits previously claimed must be reduced. If the creditable basis is determined in these circumstances to be less than what we or our tax equity investment funds reported, we may owe our fund investors an amount equal to the amount by which the ITCs are reduced (including any interest and penalties), plus any costs and expenses associated with a challenge to that valuation. We could also be subject to tax liabilities, including interest and penalties. If the IRS further disagrees now or in the future with the amounts we or our tax equity investment funds reported regarding the creditable or depreciable basis of our solar energy systems, it could have a material adverse effect on our business, financial condition, and prospects.

We have purchased insurance policies insuring us and related parties for additional taxes owed in respect of lost Commercial ITCs, depreciation, gross-up costs and expenses incurred in defending the types of claims described above. However, these policies only cover certain investment funds and have negotiated exclusions from, and limitations to, coverage and therefore may not cover us for all such lost Commercial ITCs, taxes, costs and expenses.

The IRS is auditing one of our investors in an audit involving a review of the fair market value determination of our solar energy systems in the investment fund, which is covered by our 2018 insurance policy. If this audit results in an adverse final determination, we may be subject to an indemnity obligation to our investor, which may result in certain limited out-of-pocket costs and potential increased insurance premiums in the future.

Our business currently depends on the availability of utility rebates, tax credits and other benefits, tax exemptions and exclusions, and other financial incentives on the federal, state, and/or local levels. We may be adversely affected by changes in, and application of, these laws or other incentives to us, and the expiration, elimination or reduction of these benefits could adversely impact our business.

Our business depends on government policies that promote and support solar energy and enhance the economic viability of owning solar energy systems. U.S. federal, state and local governmental bodies provide incentives to owners, distributors, installers and manufacturers of solar energy systems to promote solar energy. These incentives include Commercial ITCs and Residential Energy Efficient Property Credit, as discussed above, as well as other tax credits, rebates and SRECs associated with solar energy generation. Some markets, such as New Jersey and Maryland, currently utilize SRECs. SRECs can be volatile and their value could decrease over time as the supply of SREC-producing solar energy systems installed in a particular market increases. We rely on these incentives to lower our cost of capital and to attract investors, all of which enable us to lower the price we charge customers for our solar service offerings. These incentives have had a significant impact on the development of solar energy but they could change at any time, especially after changes in the Administration or Congress. These incentives may also expire on a particular date, end when the allocated funding is exhausted, or be reduced, terminated or repealed without notice. The financial value of certain incentives may also decrease over time.

In December 2017, significant federal tax legislation was enacted, including a change to the corporate tax rate (the "Tax Act"). As part of the Tax Act, the current corporate income tax rate was reduced, and there were other changes including limiting or eliminating various other deductions, credits and tax preferences. This reduction in the corporate income tax rate may have reduced appetite for the Commercial ITC and depreciation benefits available with respect to solar facilities. The IRA implemented a corporate alternative minimum tax of 15% of financial statement income (subject to certain adjustments) for companies that report over $1 billion in profits to shareholders; similar to existing law, business credits (including Commercial ITCs) are limited to 75% of income in excess of $25,000 (with no limit against the first $25,000). We cannot predict whether and to what extent the U.S. corporate income tax rate will change under the Biden administration. The U.S. Congress is constantly considering changes to the tax code. For example, on June 13, 2023, the House Ways & Means Committee passed legislation (H.R. 3938) that, if it became law, would eliminate the IRA's Section 48E Clean Electricity Investment Credit, which is scheduled to take effect on January 1, 2025. Further limitations on, or elimination of, the tax benefits that support the financing of solar energy under current U.S. law could significantly impact our ability to raise tax equity investment funds or impact the terms thereof, including the amount of cash distributable to our investors. Similarly, any unfavorable interpretations of tax law by the IRS and/or the courts with respect to our financing structures could reduce the willingness of investors to invest in our funds associated with any such structure.

Any effort to overturn federal and state laws, regulations or policies that are supportive of solar energy generation or that remove costs or other limitations on other types of energy generation that compete with solar energy projects could materially and adversely affect our business.

Our business model also relies on multiple tax exemptions offered at the state and local levels. For example, some states have property tax exemptions that exempt the value of solar energy systems in determining values for calculation of local and state real and personal property taxes. State and local tax exemptions can have sunset dates, triggers for loss of the exemption, and can be changed by state legislatures and other regulators, and if solar energy systems were not exempt from such taxes, the property taxes payable by customers would be higher, which could offset any potential savings our solar service offerings could offer. Similarly, if state or local legislatures or tax administrators impose property taxes on third-party owners of solar energy systems, solar companies like us would be subject to higher costs. California provides an exclusion (the "Solar Exclusion") from the assessment of California property taxes for qualifying "active solar energy systems" installed as fixtures before January 1, 2027, provided such systems are locally rather than centrally assessed ("Eligible Property"). However, the Solar Exclusion is not a permanent exclusion from the assessment of property tax. Once a change in ownership of the Eligible Property occurs, the Eligible Property may be subject to reassessment and California property taxes may become due.

In general, we rely on certain state and local tax exemptions that apply to the sale of equipment, sale of power, or both. These state and local tax exemptions can expire, can be changed by state legislatures, or their application to us can be challenged by regulators, tax administrators, or court rulings, and such changes could adversely impact our business and the profitability of our offerings in certain markets.

We may be subject to adverse California property tax consequences.

The State of California provides an exclusion (the "Solar Exclusion") from the assessment of California property taxes for qualifying "active solar energy systems" installed as fixtures before January 1, 2027, provided such systems are locally rather than centrally assessed ("Eligible Property"). However, the Solar Exclusion is not a permanent exclusion from the assessment of property tax. Once a change in ownership of the Eligible Property occurs, the Eligible Property may be subject to reassessment and California property taxes may become due.

Vivint Solar, through certain of its subsidiaries, owns solar energy systems that constitute Eligible Property (the "California PV Systems"). To the extent Vivint Solar or its subsidiaries are considered the tax owners of the California PV Systems for purposes of the California Revenue and Tax Code, our acquisition of Vivint Solar may constitute a change of control of the California PV Systems, triggering the loss of the Solar Exclusion and the imposition of California property taxes, which could adversely affect our business.

If we are unable to maintain effective disclosure controls and internal controls over financial reporting, investors may lose confidence in the accuracy and completeness of our financial reports and, as a result, the value of our common stock may be materially and adversely affected.

We are required, pursuant to the Exchange Act, to furnish a report by management on, among other things, the effectiveness of our internal controls over financial reporting. This assessment includes disclosure of any material weaknesses, if any, identified by our management in our internal controls over financial reporting. We are continuing to develop and refine our disclosure controls and improve our internal controls over financial reporting. We have expended, and anticipate that we will continue to expend, significant resources in order to maintain and continuously look for ways to enhance existing effective disclosure controls and procedures and internal controls over financial reporting. Our current controls and any new controls that we develop may become inadequate because of changes in conditions in our business, which presents additional complexities relating to the design and implementation of our disclosure controls and internal control over financial reporting. In addition, we or our independent accounting firm may identify weaknesses and deficiencies that we may not otherwise identify in a timely manner in the future. If we are not able to complete the work required under Section 404 of the Sarbanes-Oxley Act on a timely basis for future fiscal years, our annual report on Form 10-K may be delayed or deficient. Because of the inherent limitations in all control systems, no evaluation of controls can provide absolute assurance that misstatements due to error or fraud will not occur or that all control issues and instances of fraud will be detected.

We cannot guarantee that our internal controls over financial reporting will prevent or detect all errors and fraud. The risk of errors is increased in light of the complexity of our business and investment funds. For example, we must deal with significant complexity in accounting for our fund structures and the resulting allocation of net (loss) income between our stockholders and noncontrolling interests under the hypothetical liquidation at book value ("HLBV") method as well as the income tax consequences of these fund structures. As we enter into additional investment funds, which may have contractual provisions different from those of our existing funds, the analysis as to whether we consolidate these funds, the calculation under the HLBV method, and the analysis of the tax impact could become increasingly complicated. This additional complexity could require us to hire additional resources and increase the chance that we experience errors in the future.

If we are unable to assert that our internal controls over financial reporting is effective, we could lose investor confidence in the accuracy and completeness of our financial reports, which would cause the price of our common stock to decline. In addition, we could become subject to investigations by Nasdaq, the SEC or other regulatory authorities, which could require additional management attention and which could adversely affect our business.

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 ("FASB"), the 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. Other companies in our industry may be affected differently by the adoption of new accounting standards, including timing of the adoption of new accounting standards, adversely affecting the comparability of financial statements.

Our ability to use our net operating loss carryforwards and certain other tax attributes may be limited.

As of December 31, 2023, we had U.S. federal and state net operating loss carryforwards ("NOLs") of approximately $720.7 million and $3.3 billion, respectively, which begin expiring in varying amounts in 2028 and 2024, respectively, if unused. Our U.S. federal and certain state NOLs generated in tax years beginning after December 31, 2017 total approximately $2.0 billion and $357.1 million, respectively, have indefinite carryover periods, and do not expire. Under Sections 382 and 383 of the Code, if a corporation undergoes an "ownership change," the corporation's ability to use its pre-change NOLs and other pre-change tax assets, such as tax credits, to offset its post change income and taxes may be limited. In general, an "ownership change" occurs if there is a cumulative change in our ownership by "5% stockholders" that exceeds 50 percentage points over a rolling three-year period. Similar rules may apply under state tax laws. Additionally, states may impose other limitations on the use of NOLs and tax credit carryforwards. Any such limitations on our ability to use our NOLs and other tax assets could adversely impact our business, financial condition, and results of operations. We have performed an analysis

to determine whether an ownership change under Section 382 of the Code had occurred and determined no ownership changes were identified as of December 31, 2023.

We may be required to record an impairment expense on our goodwill or intangible assets.

We are required under generally accepted accounting principles to test goodwill for impairment at least annually or when events or changes in circumstances indicate that the carrying value may be impaired, and to review our intangible assets for impairment when events or changes in circumstances indicate the carrying value may not be recoverable. Factors that can lead to impairment of goodwill and intangible assets include significant adverse changes in the business climate and actual or projected operating results, declines in the financial condition of our business and sustained decrease in our stock price. During the third quarter of fiscal 2023, we performed an interim quantitative assessment as of September 30, 2023 related to the recoverability of our goodwill for our one reporting unit as a result of a material sustained decline in our stock price. We concluded that the fair value of our one reporting unit did not exceed its carrying value as of September 30, 2023 and recorded an impairment of $1.2 billion in our consolidated statements of operations. As of October 1, 2023, we conducted our annual goodwill impairment test. The test concluded that no additional impairment had occurred during the fourth quarter of 2023.

It is possible that we could recognize further goodwill impairment losses in the future if, among other factors:

- there are further sustained declines in our stock price
- valuations for comparable companies or comparable acquisitions valuations deteriorate the cost of equity or debt capital increases; or
- the outlook for future cash flows for our reporting unit deteriorate including but not limited to, increased competition, changes to discount rate, downward forecast revisions, restricting plans or changes in state and federal regulations affecting our business.

For further information regarding the assessment please see Note 2, *Summary of Significant Accounting Policies,* in this Annual Report on Form 10-K.

Risks Related to Ownership of Our Common Stock

Our executive officers, directors and principal stockholders continue to have substantial control over us, which will limit your ability to influence the outcome of important matters, including a change in control.

Our executive officers, directors and each of our stockholders who beneficially own 5% or more of our outstanding common stock and their affiliates, in the aggregate, beneficially own approximately 33.7% of the outstanding shares of our common stock, based on the number of shares outstanding as of December 31, 2023. As a result, these stockholders, if acting together, will be able to influence or control matters requiring approval by our stockholders, including the election of directors and the approval of mergers, acquisitions or other extraordinary transactions. They may also have interests that differ from yours and may vote in a way with which you disagree and which may be adverse to your interests. This concentrated control may have the effect of delaying or preventing a change in control of our company, could deprive our stockholders of an opportunity to receive a premium for their capital stock and might ultimately affect the market price of our common stock.

The market price of our common stock has been and may continue to be volatile, and you could lose all or part of your investment in our common stock.

The trading price of our common stock has been volatile since our initial public offering, and is likely to continue to be volatile. Factors that could cause fluctuations in the market price of our common stock include the following:

- price and volume fluctuations in the overall stock market from time to time;

- volatility in the market prices and trading volumes of companies in our industry or companies that investors consider comparable;
- changes in operating performance and stock market valuations of other companies generally, or those in our industry in particular;
- sales of shares of our common stock by us or our stockholders;
- failure of securities analysts to maintain coverage of us, changes in financial estimates by securities analysts who follow us, or our failure to meet these estimates or the expectations of investors;
- the financial projections we may provide to the public, any changes in those projections or our failure to meet those projections;
- announcements by us or our competitors of new products or services;
- the public's reaction to our press releases, other public announcements and filings with the SEC;
- rumors and market speculation involving us or other companies in our industry;
- actual or anticipated changes in our results of operations;
- changes in tax and other incentives that we rely upon in order to raise tax equity investment funds;
- actual or perceived data privacy or security incidents;
- our ability to protect our intellectual property and other proprietary rights;
- changes in the regulatory environment and utility policies and pricing, including those that could reduce any savings we are able to offer to customers;
- actual or anticipated developments in our business, our competitors' businesses or the competitive landscape generally;
- litigation involving us, our industry or both, or investigations by regulators into our operations or those of our competitors;
- announced or completed acquisitions of businesses or technologies by us or our competitors;
- new laws or regulations or new interpretations of existing laws or regulations applicable to our business;
- changes in accounting standards, policies, guidelines, interpretations or principles;
- major catastrophic events, global armed conflicts or civil unrest;
- negative publicity, including accurate or inaccurate commentary or reports regarding us, our products, our sales professionals or other personnel, or other third parties affiliated with us, on social media platforms, blogs, and other websites;

- any significant change in our management; and

- general economic conditions including instability in financial markets and bank failures, and slow or negative growth of our markets.

Further, the stock markets have experienced 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 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, government shutdowns, interest rate changes, or international currency fluctuations, has, and may continue to, cause the trading price of the notes and our common stock to decline. In the past, following periods of volatility in the overall market and the market price of a particular company's securities, securities class action litigation has often been instituted against these companies. We are party to litigation that could result in substantial costs and a diversion of our management's attention and resources.

Sales of a substantial number of shares of our common stock in the public market, including by our existing stockholders, could cause our stock price to fall.

Sales of a substantial number of shares of our common stock in the public market, or the perception that these sales might occur, could depress the market price of our common stock and could impair our ability to raise capital through the sale of additional equity securities. We are unable to predict the effect that these sales and others may have on the prevailing market price of our common stock.

In addition, certain of our stockholders, including SK E&S Co., Ltd. and other affiliated companies as well as certain stockholders who received shares as a result of our acquisition of Vivint Solar, have registration rights that would require us to register shares of our capital stock owned by them for public sale in the United States. We have also filed a registration statement to register shares of our common stock reserved for future issuance under our equity compensation plans, including shares underlying equity awards assumed in connection with our acquisition of Vivint Solar. Subject to the satisfaction of applicable exercise periods and applicable volume and restrictions that apply to affiliates, the shares of our common stock issued upon exercise of outstanding options will become available for immediate resale in the public market upon issuance.

Future sales of our common stock 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 the market price of our common stock to decline and make it more difficult for you to sell shares of our common stock.

Anti-takeover provisions contained in our restated certificate of incorporation and amended and restated bylaws, as well as provisions of Delaware law, could impair a takeover attempt.

Our restated certificate of incorporation, amended and restated bylaws and Delaware law contain provisions that could have the effect of rendering more difficult, delaying, or preventing an acquisition deemed undesirable by our board of directors and therefore depress the trading price of our common stock. Among other things, our restated certificate of incorporation and amended and restated bylaws include provisions:

- authorizing "blank check" preferred stock, which could be issued by our board of directors without stockholder approval and may contain voting, liquidation, dividend and other rights superior to our common stock;

- limiting the liability of, and providing indemnification to, our directors and officers;

- limiting the ability of our stockholders to call and bring business before special meetings;

- requiring advance notice of stockholder proposals for business to be conducted at meetings of our stockholders and for nominations of candidates for election to our board of directors; and

- controlling the procedures for the conduct and scheduling of board of directors and stockholder meetings.

These provisions, alone or together, could delay or prevent hostile takeovers and changes in control or changes in our management.

As a Delaware corporation, we are also subject to provisions of Delaware law, including Section 203 of the Delaware General Corporation law, which prevents certain stockholders holding more than 15% of our outstanding capital stock from engaging in certain business combinations without approval of the holders of at least two-thirds of our outstanding capital stock not held by such stockholder. Any provision of our restated certificate of incorporation, amended and restated bylaws or Delaware law that has the effect of delaying or preventing a change in control could limit the opportunity for our stockholders to receive a premium for their shares of our capital stock and could also affect the price that some investors are willing to pay for our common stock.

Provisions contained in our restated certificate of incorporation and amended and restated bylaws limit the ability of our stockholders to call special meetings and prohibit stockholder action by written consent.

Our restated certificate of incorporation provides that our stockholders may not take action by written consent. Instead, any such actions must be taken at an annual or special meeting of our stockholders. As a result, our stockholders are not able to take any action without first holding a meeting of our stockholders called in accordance with the provisions of our amended and restated bylaws, including advance notice procedures set forth in our amended and restated bylaws. Our amended and restated bylaws further provide that special meetings of our stockholders may be called only by a majority of our board of directors, the chairman of our board of directors, our Chief Executive Officer or our President. As a result, our stockholders are not allowed to call a special meeting. These provisions may delay the ability of our stockholders to force consideration of a stockholder proposal, including a proposal to remove directors.

Provisions contained in our restated certificate of incorporation and amended and restated bylaws could preclude our stockholders from bringing matters before meetings of stockholders and delay changes in our board of directors.

Our amended and restated bylaws provide advance notice procedures for stockholders seeking to bring business before, or nominate candidates for election as directors at, our annual or special meetings of stockholders. In addition, our restated certificate of incorporation provides that stockholders may remove directors only for cause. Any amendment of these provisions in our amended and restated bylaws or restated certificate of incorporation would require approval by holders of a majority of our then outstanding capital stock. These provisions could preclude our stockholders from bringing matters before annual or special meetings of stockholders and delay changes in our board of directors.

Our amended and restated bylaws provide that a state or federal court located within the State of Delaware will be the sole and exclusive forum for substantially all disputes between us and our stockholders, which could limit our stockholders' ability to obtain a favorable judicial forum for disputes with us or our directors, officers or employees.

Our amended and restated bylaws provide that, unless we consent to the selection of an alternative forum, the sole and exclusive forum for (i) any derivative action or proceeding brought on our behalf, (ii) any action asserting a claim of breach of fiduciary duty owed by any of our directors, officers or other employees to us or to our stockholders, (iii) any action asserting a claim arising pursuant to any provision of the Delaware General Corporation Law or (iv) any action asserting a claim governed by the internal affairs doctrine shall be a state or federal court located within the state of Delaware, in all cases subject to the court's having personal jurisdiction over the indispensable parties names as defendants. The choice of forum provision may limit a stockholder's ability to bring a claim in a judicial forum that it finds favorable for disputes with us or our directors, officers or other employees, which may discourage such lawsuits against us and our directors, officers and other employees. In addition, our amended and restated bylaws also provide that, unless we consent to the selection of an alternative forum, to the fullest extent permitted by law, the federal district courts of the United States of America shall be the sole and exclusive forum for the resolution of any complaint asserting a cause of action arising under the Securities Act. If a court were to find the choice of forum provisions contained in our amended and restated bylaws to be

inapplicable or unenforceable in an action, we may incur additional costs associated with resolving such action in other jurisdictions, which could harm our business, results of operations and financial condition.

If securities or industry analysts cease publishing research or reports about us, our business, our market or our competitors, or if they adversely change their recommendations regarding our common stock, the market price of our common stock and trading volume could decline.

The market for our common stock is influenced by the research and reports that securities or industry analysts publish about us, our business, our market or our competitors. If any of the analysts who cover us adversely change their recommendations regarding our common stock, or provide more favorable recommendations about our competitors, the market price of our common stock would likely decline. If any of the analysts who cover us 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 the market price of our common stock and trading volume to decline.

We do not expect to declare any dividends in the foreseeable future, so investors may need to rely on sales of our common stock after price appreciation, which may never occur or only occur at certain times, as the only way to realize any future gains on their investment.

We do not anticipate declaring any cash dividends to holders of our common stock in the foreseeable future. In addition, our credit agreements contain restrictions on payments of cash dividends. Consequently, investors may need to rely on sales of our common stock after price appreciation, which may never occur or only occur at certain times, as the only way to realize any future gains on their investment. Investors seeking cash dividends should not purchase shares of our common stock.

Additional issuances of our capital stock or equity-linked securities could result in dilution to our stockholders.

We may issue additional equity securities to raise capital, make acquisitions or for a variety of other purposes. For example, in connection with the acquisition of Vivint Solar, we issued 0.55 shares of our common stock for each share of Vivint Solar's common stock owned prior to the acquisition, which resulted in dilution to our stockholders. Additional issuances of our capital stock may be made pursuant to the exercise or conversion of new or existing convertible debt securities (including the Notes), warrants, stock options or other equity incentive awards to new and existing service providers. Any such issuances will result in dilution to existing holders of our stock. We also rely on equity-based compensation as an important tool in recruiting and retaining employees. The amount of dilution due to equity-based compensation of our employees and other additional issuances of our common stock or securities convertible into or exchangeable or exercisable for our common stock could be substantial, and the market price of our common stock could decline.

The Capped Call transactions may negatively affect the value of our common stock.

In connection with the issuance of the Notes, we entered into the Capped Call transactions with the option counterparties. The Capped Call transactions are expected generally to reduce the potential dilution to our common stock upon any conversion of Notes and/or offset any cash payments we are required to make in excess of the principal amount of converted Notes, as the case may be, with such reduction and/or offset subject to a cap.

The option counterparties or their respective affiliates may modify their hedge positions by entering into or unwinding various derivatives with respect to our common stock and/or purchasing or selling our common stock or other securities of ours in secondary market transactions prior to the maturity of the Notes (and are likely to do so during the observation period for conversions of Notes following November 1, 2025 or following any repurchase of Notes by us). This activity could also cause or avoid an increase or a decrease in the market price of our common stock.

The potential effect, if any, of these transactions and activities on the market price of our common stock will depend in part on market conditions and cannot be ascertained at this time.

Item 1B. Unresolved Staff Comments.

Not applicable.

Item 1C. Cybersecurity.

Cybersecurity Risk Management and Strategy

We recognize the importance of assessing, identifying, and managing material risks associated with cybersecurity threats. We have implemented cybersecurity processes, technologies, and controls to aid in our efforts to assess, identify, and manage such material risks.

To identify and assess material risks from cybersecurity threats, our enterprise risk management program considers cybersecurity threat risks alongside other company risks as part of our overall risk assessment process. Our enterprise risk professionals collaborate with subject matter specialists, as necessary, to gather insights for identifying and assessing material cybersecurity risks, their severity, and potential mitigation strategies. We employ various tools and services for such purposes, including network, cloud and endpoint monitoring, vulnerability assessments, penetration testing, and tabletop exercises. We also have a cybersecurity risk assessment process, which helps identify our cybersecurity threat risks by considering certain industry standards as well as by engaging third parties to assess the security posture of our information security program.

To manage our material risks from cybersecurity threats, we take certain measures, including the below listed activities, depending on the nature of the relevant systems, data, and environment:

- undertaking period reviews of our consumer-facing policies and statements;
- conduct phishing email simulations for employees and contractors with access to corporate email systems;
- require employees, and certain service providers, to treat customer information with care;
- running tabletop exercises to simulate a response to a cybersecurity incident;
- carrying cybersecurity insurance that provides protection against the potential losses arising from a cybersecurity incident;
- conducting annual cybersecurity awareness training for employees; and
- maintaining an incident response plan to prepare for, detect, respond to, and recover from, cybersecurity incidents.

As part of our efforts to identify, assess, and manage material risks from cybersecurity threats, we engage third-party cybersecurity consultants and use them to, among other things, conduct a review of our cybersecurity program or conduct a tabletop exercise to help identify areas for continued focus, improvement and/or compliance.

Our processes also address cybersecurity risks associated with our use of third-party service providers, including those in our supply chain, which also include, but are not limited to, open-source software in our application development processes, or those who have access to our customer and employee data or our systems. Addressing these risks is part of our enterprise risk management program. Cybersecurity risks affect the selection and oversight of our third-party service providers. We perform diligence on third-parties that have access to our critical systems, data or facilities that house such systems or data, and monitor cybersecurity threat risks identified through such diligence. Additionally, we may impose contractual requirements related to cybersecurity on certain third parties that could pose significant cybersecurity risk to us and require them to agree to audits as appropriate.

We describe the risks from cybersecurity threats that may materially affect us and how they may do so under the heading “Risks Related to Our Business Operations” under Item 1A of this Annual Report on Form 10-K, which disclosures are incorporated by reference herein.

Cybersecurity Governance

Cybersecurity is an important part of our risk management processes and an area of increasing focus for our Board and management. Our approach is to treat cybersecurity not just as a technology issue, but to recognize that it can have wide-ranging impacts on the business, operations, and financials of our company.

Our Audit Committee is responsible for the oversight of risks from cybersecurity threats and receives updates from management quarterly. At least annually, the entire Board receives an overview from management of our cybersecurity threat risk management and strategy processes covering topics such as data security posture, results from third-party assessments, progress towards pre-determined risk-mitigation-related goals, our incident response plan, and material cybersecurity threat risks or incidents and developments, as well as the steps management has taken to respond to such risks. In such sessions, the Audit Committee and Board generally receive materials including a cybersecurity scorecard and other materials indicating current and emerging material cybersecurity threat risks, and describing the company's ability to mitigate those risks, and discuss such matters with our Chief Information Security Officer. Members of the Board are also encouraged to regularly engage in ad hoc conversations with management on cybersecurity-related news events and discuss any updates to our cybersecurity risk management and strategy programs. Material cybersecurity threat risks are also considered during separate Board meeting discussions of important matters like enterprise risk management, operational budgeting, business continuity planning, mergers and acquisitions, brand management, and other relevant matters.

Our cybersecurity risk management and strategy processes, which are discussed in greater detail above, are led by our Chief Information Security Officer (CISO) in connection with our Chief Technology Officer, Chief Legal and People Officer, our Senior Vice President of Legal and Vice President, Internal Audit. Such individuals have extensive prior work experience and expertise spanning over three decades in various roles involving managing information security, developing cybersecurity strategy, implementing effective information and cybersecurity programs, managing cybersecurity operations and incident response, and incorporating security and privacy by design into software development programs, and our CISO has both CISSP and CRISC certifications.

These members of management are informed about and monitor the prevention, mitigation, detection, and remediation of cybersecurity incidents through their management of, and participation in, the cybersecurity risk management and strategy processes described above, including the operation of our incident response plan.

As discussed above, these members of management report to the entire Board about cybersecurity threat risks, among other cybersecurity related matters at least annually, with updates to the Audit Committee on a quarterly basis.

Item 2. Properties.

Our corporate headquarters and executive offices are located in San Francisco, California, where we lease approximately 44,000 square feet of office space. We also maintain 101 other locations, consisting primarily of branch offices, warehouses, sales offices and design centers in 19 states.

We lease all of our facilities and we do not own any real property. We believe that our current facilities are adequate to meet our ongoing needs. If we require additional space, we believe that we will be able to obtain additional facilities on commercially reasonable terms.

Item 3. Legal Proceedings.

See Note 18, *Commitments and Contingencies*, to our consolidated financial statements included elsewhere in this Annual Report on Form 10-K.

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 began trading on the Nasdaq Global Select Market under the symbol "RUN" on August 5, 2015.

Holders of Record

As of February 16, 2024, there were approximately 429 holders of record of common stock. Certain shares are held in "street" name and, accordingly, the number of beneficial owners of such shares is not known or included in the foregoing number.

Dividend Policy

We have never declared or paid any cash dividends on our capital stock. We currently intend to retain all available funds and any future earnings for use in the operation of our business and do not expect to pay any dividends on our capital stock in the foreseeable future. Any future determination to declare dividends will be made at the discretion of our board of directors, subject to applicable laws, and will depend on a number of factors, including our financial condition, results of operations, capital requirements, contractual restrictions, general business conditions and other factors that our board of directors may deem relevant. In addition, our credit agreements contain restrictions on payments of cash dividends.

Unregistered Sales of Equity Securities

During the year ended December 31, 2021, we issued warrants exercisable for up to 846,943 shares of our common stock to certain strategic partners, calculated using the closing stock price for the respective stock grant's quarter of issuance. The shares underlying the warrants will vest upon certain time- and performance-based criteria as set forth in the warrants. The exercise price of the warrants is $0.01 per share, and 63,742, 346,269 and 69,309 warrants were exercised during the years ended December 31, 2023, 2022 and 2021, respectively.

The warrants were issued and sold pursuant to an exemption from the registration requirements of Section 5 of the Securities Act, as they did not involve a public offering under Section 4(a)(2) and were issued as restricted securities pursuant to Rule 144 of the Securities Act.

Stock Price Performance Graph

The following stock performance graph compares our total stock return with the total return for (i) the Nasdaq Composite Index and the (ii) the Invesco Solar ETF, which represents a peer group of solar companies, for the period from December 31, 2018 through December 31, 2023. The figures represented below assume an investment of $100 in our common stock at the closing price of $10.89 on December 31, 2018 and in the Nasdaq Composite Index and the Invesco Solar ETF on December 31, 2018 including the reinvestment of dividends into shares of common stock. The comparisons in the table are required by the SEC, and are not intended to forecast or be indicative of possible future performance of our common stock. This graph shall not be deemed "soliciting material" or be deemed "filed" for purposes of Section 18 of the Exchange Act, or otherwise subject to the liabilities under that section, and shall not be deemed to be incorporated by reference into any of our filings under the Securities Act, whether made before or after the date hereof and irrespective of any general incorporation language in any such filing.

Item 6. [Reserved].

Not applicable.

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

The following discussion and analysis of our financial condition and results of operations should be read in conjunction with our consolidated financial statements and related notes thereto included elsewhere in this Annual Report on Form 10-K. This discussion contains forward-looking statements that involve risks and uncertainties. Our actual results could differ materially from those discussed below. Factors that could cause or contribute to such differences include those identified below and those discussed in the section titled "Risk Factors" included elsewhere in this Annual Report on Form 10-K.

We provide clean, solar energy and energy storage to customers at a significant savings compared to traditional utility energy. We have been selling solar energy to residential customers through a variety of offerings since we were founded in 2007. We, either directly or through one of our solar partners, install a solar energy system on a customer's home and either sell the system to the customer or, as is more often the case, sell the energy generated by the system to the customer pursuant to a lease or PPA with no or low upfront costs. We refer to these leases and PPAs as "Customer Agreements." Following installation, a system is interconnected to the local utility grid. The home's energy usage is provided by the solar energy system, with any additional energy needs provided by the local utility. Any excess solar energy, including amounts in excess of battery storage, that is not immediately used by the customers is exported to the utility grid using a bi-directional utility net meter, and the customer generally receives a credit for the excess energy from their utility to offset future usage of utility-generated energy.

We offer our solar service offerings both directly to the customer and through our solar partners, which include sales and installation partners, and strategic partners, which include retail partners. In addition, we sell solar energy systems directly to customers for cash. We also sell solar energy panels and other products (such as racking) to resellers. As of December 31, 2023, we provided our solar services to customers and sold solar energy panels and other products to resellers throughout the United States. More than 45% of our cumulative systems deployed are in California.

We compete mainly with traditional utilities. In the markets we serve, our strategy is to price the energy we sell below prevailing local retail electricity rates. As a result, the price our customers pay under our solar service offerings varies depending on the state where the customer lives, the local traditional utility that otherwise provides electricity to the customer, as well as the prices other solar energy companies charge in that region. Even within the same neighborhood, site-specific characteristics drive meaningful variability in the revenue and cost profiles of each home. Using our proprietary technology, we target homes with advantageous revenue and cost characteristics, which means we are often able to offer pricing that allows customers to save more on their energy bill while maintaining our ability to meet our targeted returns. For example, with the insights provided by our technology, we can offer competitive pricing to customers with homes that have favorable characteristics, such as roofs that allow for easy installation, high electricity consumption, or low shading, effectively passing through the cost savings we are able to achieve on these installations to the customer.

Our ability to offer Customer Agreements depends in part on our ability to finance the purchase and installation of the solar energy systems by monetizing the resulting customer cash flows and related Commercial ITCs, accelerated tax depreciation and other incentives from governments and local utilities. We monetize these incentives under tax equity investment funds, which are generally structured as non-recourse project financings. Since inception we have raised numerous tax equity investment funds to finance the installation of solar energy systems. From time to time, we may repurchase investors' interests in our tax equity investment funds after the recapture period of the relevant tax incentives. We intend to establish additional investment funds and may also use debt, equity and other financing strategies to fund our growth.

In addition, completing the sale and installation of a solar energy system requires many different steps including a site audit, completion of designs, permitting, installation, electrical sign-off and interconnection. Customers may cancel their Customer Agreements with us, subject to certain conditions, during this process until commencement of installation. Customer cancellation rates can change over time and vary between markets.

Market & Macroeconomic Environment

Our business and financial performance also depend on worldwide economic conditions. We face global macroeconomic challenges, particularly in light of increases and volatility in interest rates, uncertainty in markets, inflationary trends, navigating complex and evolving regulatory and tax frameworks, and the dynamics of the global trade environment. During the twelve months ended December 31, 2023, we observed market uncertainty, increasing inflationary pressures, rising interest rates, the market impacts of proposed or newly enacted regulatory frameworks in markets within which we do business and within our industry, supply constraints, and bank failures. In particular, rising interest rates, including recent historic increases starting in 2021, have resulted and may continue to result in a decrease in our advance rates, reducing the proceeds we receive from certain investment funds. Because our financing structure is sensitive to volatility in interest rates, higher rates increase our cost of capital and may decrease the amount of capital available to us to finance the deployment of new solar energy systems. These market dynamics, some of which we expect will continue into the foreseeable future, have impacted and may continue to impact our business and financial results.

In December 2022, California made changes to its net metering policy by adopting NBT, which presents a significant change to the rate structure for new California customers, and has partially limited the financial attractiveness of our offerings in certain regions of the state, particularly for solar-only systems. However, under this new policy, the value proposition of storage offerings is significantly enhanced. We believe that California will be predominantly a solar plus storage market going forward and the vast majority of California sales now consist of either our Sunrun Shift product or our backup battery offerings. As the demand for solar plus storage offerings grows, we anticipate facing additional operational challenges associated with the complexity of deploying storage solutions. For example, solar plus storage offerings tend to have longer cycle times due to factors such as lengthened permitting and inspection times and potential need of a main panel upgrade. Any such factors that extend the timeframes from customer signature to installation have historically resulted in increased operational challenges and correspondingly lower realization rates, and any future instances may continue to do so. Accordingly, this may adversely affect our financial performance, as well as the timing and magnitude of our installations and the recognition of the associated revenue.

Under the new NBT framework, the value proposition of our products is best understood when customers compare the combined costs of their utility bill along with their Sunrun solar and storage bill, due to the impact of time-of-use rates and export rates. The solar industry in California is adjusting from selling based on the value of solar-only to a more complicated rate design with NBT. We believe the best customer offering is one that pairs solar and storage, although it may be more confusing to customers when compared to solar-only offers from competitors. This dynamic may result in less sales efficacy so long as customers continue to be presented with inferior, but simpler, solar-only offerings and as a result, may harm our business, financial condition, and results of operations, and may also harm the reputation of the solar industry in California at large.

Since implementation of NBT, originations in California have continued to be below levels prior to the transition for us and across the residential solar industry. Without further increases in originations, our new installations in California may continue to decline compared to prior periods, which could have a material adverse effect on our business operations and financial performance.

We have also recently seen new market entrants paying significantly higher turnkey prices and sales commissions than prevailing industry norms. Although we believe this to be an economically unsustainable practice, in the short term, it has contributed to increased competition in the industry.

The Opportunity of Home Electrification and a Clean, Resilient Grid

The United States is on the precipice of a once-in-a-generation transformation of our energy system. The decarbonization of the American economy will require powering our energy supply, including our homes, appliances and automobiles, with clean energy. Sunrun's next goal and chapter of growth is to be the go-to company for clean and reliable home electrification, providing our customers with affordable renewable energy throughout their homes and our communities with a cleaner, more resilient grid.

We intend to pursue these opportunities on a variety of fronts, and we continue to pursue the development of our grid services business, creating virtual power plants that lead to a cleaner, more resilient grid. In collaboration with grid managers, we can deploy our battery systems where they will add the most value for utilities, the grid, and customers. We are actively delivering demand response and capacity services to meet operational needs in multiple geographies, and partnering with grid managers to build a more resilient electricity system that integrates the new energy technologies customers want.

We believe the electrification of U.S. households with renewable energy, and the accompanying development of an inter-connected, smart grid will provide a number of market opportunities beyond our traditional solar and battery storage offerings, including EV chargers, battery retrofits, re-powered or expanding systems, home energy management services, and other home electrification products. Additionally, we believe our omni-channel model and geographic reach provides us with the capabilities to execute on these opportunities in a variety of markets.

To further expand such future upsell and retrofit opportunities, from time to time, we may pursue acquisitions of previously installed solar systems. While we do not expect such acquisitions to represent a material portion of our growth on an annual basis, we plan to pursue such transactions opportunistically. For instance, in the third quarter of fiscal 2021, we completed a strategic transaction that added approximately 2,000 Customers and 13 MW of Networked Solar Energy Capacity.

In sum, we believe the electrification of the U.S. economy with renewable energy presents an unprecedented economic opportunity, as well as our country's best path to achieving net zero emissions by 2050. Through these electrification opportunities and our grid services business, we aim to be the consumer brand synonymous with repowering our customers' homes with renewable energy and providing a pathway to a cleaner, healthier future.

Investment Funds

Our Customer Agreements provide for recurring customer payments, typically over 20 or 25 years, and the related solar energy systems are generally eligible for Commercial ITCs, accelerated tax depreciation and other government or utility incentives. Our financing strategy is to monetize these benefits at a low weighted average cost of capital. This low cost of capital enables us to offer attractive pricing to our customers for the energy generated by the solar energy system on their homes. Historically, we have monetized a portion of the value created by our Customer Agreements and the related solar energy systems through investment funds. These assets are attractive to fund investors due to the long-term, recurring nature of the cash flows generated by our Customer Agreements, the high credit scores of our customers, the fact that energy is a non-discretionary good and our low loss rates. In addition, fund investors can receive attractive after-tax returns from our investment funds due to their ability to utilize Commercial ITCs, accelerated depreciation and certain government or utility incentives associated with the funds' ownership of solar energy systems.

As of December 31, 2023, we had 64 active investment funds, which are described below. We have established different types of investment funds to implement our asset monetization strategy. Depending on the nature of the investment fund, cash may be contributed to the investment fund by the investor upfront or in stages based on milestones associated with the design, construction or interconnection status of the solar energy systems. The cash contributed by the fund investor is used by the investment fund to purchase solar energy systems. The investment funds either own or enter into a master lease with a Sunrun subsidiary for the solar energy systems, Customer Agreements and associated incentives. We receive on-going cash distributions from the investment funds representing a portion of the monthly customer payments received. We use the upfront cash, as well as on-going distributions to cover our costs associated with designing, purchasing and installing the solar energy systems. In addition, we also use debt, equity and other financing strategies to fund our operations. The allocation of the economic benefits between us and the fund investor and the corresponding accounting treatment varies depending on the structure of the investment fund.

We currently utilize three legal structures in our investment funds, which we refer to as: (i) pass-through financing obligations, (ii) partnership flips and (iii) joint venture ("JV") inverted leases. We reflect pass-through financing obligations on our consolidated balance sheet as a pass-through financing obligation. We record the investor's interest in partnership flips or JV inverted leases (which we define collectively as "consolidated joint ventures") as noncontrolling interests or redeemable noncontrolling interests. These consolidated joint ventures are usually redeemable at our option and, in certain cases, at the investor's option. If redemption is at our option or the consolidated joint ventures are not redeemable, we record the investor's interest as a noncontrolling interest and account for the interest using the HLBV method. If the investor has the option to put their interest to us, we record the investor's interest as a redeemable noncontrolling interest at the greater of the HLBV and the redemption value.

The table below provides an overview of our current investment funds (dollars in millions):

		Consolidated Joint Ventures	
	Pass-Through Financing Obligations	Partnership Flip	JV Inverted Lease
Consolidation	Owner entity consolidated, tenant entity not consolidated	Single entity, consolidated	Owner and tenant entities consolidated
Balance sheet classification	Pass-through financing obligation	Redeemable noncontrolling interests and noncontrolling interests	Redeemable noncontrolling interests
Revenue from Commercial ITCs	Recognized on the permission to operate date	None	None
Method of calculating investor interest	Effective interest rate method	Greater of HLBV or redemption value	Greater of HLBV or redemption value
Liability balance as of December 31, 2023	$ 294.6	N/A	N/A
Noncontrolling interest balance (redeemable or otherwise) as of December 31, 2023	N/A	$ 1,678.5	$ 5.3

For further information regarding our investment funds, including the associated risks, see Item 1A. *Risk Factors—*"*Our ability to provide our solar service offerings to customers on an economically viable basis depends in part on our ability to finance these systems with fund investors who seek particular tax and other benefits.*", Note 12, *Pass-Through Financing Obligations*, Note 13, *VIE Arrangements* and Note 14, *Redeemable Noncontrolling Interests* to our consolidated financial statements appearing elsewhere in this Annual Report on Form 10-K.

Pass-through Financing Obligations

Pass-Through Financing Obligations. In this investment fund structure, we and the fund investor each utilize separate entities to facilitate the pass-through of the Commercial ITC to the fund investors. We contribute solar energy systems to an “owner” entity in exchange for interests in the owner entity, and the fund investors contribute cash to a “tenant” entity in exchange for interests in the tenant entity.

Under our pass-through financing obligation structure, in accordance with the provisions of FASB, Accounting Standards Codification (“ASC”) Topic 810, *Consolidation*, we have determined that we are the primary beneficiary of the owner entity, and accordingly, we consolidate that entity. We have also determined that we are not the primary beneficiary of the tenant entity, and accordingly, we do not consolidate that entity.

In this investment fund structure, the investors make a series of large up-front payments as well as, in some instances, subsequent smaller quarterly lease payments through their respective tenant entity to the corresponding owner entity in exchange for the assignment of cash flows from Customer Agreements and certain other benefits associated with the Customer Agreements and related solar energy systems. We account for the payments from investors as borrowings by recording the proceeds received as financing obligations. The financing obligation is reduced over a period of approximately 22 years, or over 7 years in the case of one fund, by customer payments under the Customer Agreements; and proceeds from the contracted resale of SRECs as they are received by the investor. In addition, funds paid for the Commercial ITC value upfront are initially recorded as a refund liability and recognized as revenue as the associated solar system reaches permission to operate ("PTO").

We account for these investment funds in our consolidated financial statements as if we have not assigned the Customer Agreement to the investor, and we record on our consolidated financial statements activities arising from the Customer Agreements and any related Commercial ITCs monetized as part of the upfront payments received from the investor and SREC sales. The interest charge on our pass-through financing obligations is imputed at the inception of the fund based on the effective interest rate in the arrangement giving rise to the obligation and is updated prospectively as appropriate.

In certain arrangements, we agree to defer a portion of the up-front payments by arranging a loan between one of our indirectly wholly owned subsidiaries to a subsidiary of the investor's tenant entity.

Consolidated Joint Ventures

Partnership Flips. Under partnership flip structures, we and our fund investors contribute cash into a partnership entity. The partnership uses the cash to acquire solar energy systems developed by us with signed Customer Agreements. Each fund investor receives a rate of return, typically on an after-tax basis, which varies by investment fund. Prior to the fund investor receiving its contractual rate of return or for a time period specified in the contractual arrangements, the fund investor receives a significant portion of the value attributable to customer payments, a majority of the accelerated tax depreciation and substantially all of the Commercial ITCs. After the fund investor receives its contractual rate of return or after the specified time period, we receive substantially all of the value attributable to the remaining customer payments and SREC sales.

Under our partnership flip structures, we have determined that we control the partnership entity which is a variable interest entity ("VIE"), and accordingly we consolidate the entity and record the investor's interest as either noncontrolling interests or redeemable noncontrolling interests in our consolidated balance sheets.

Inverted Leases. Under our inverted lease structure, we and the fund investor set up a multi-tiered investment vehicle that is comprised of two partnership entities which facilitate the pass through of the tax benefits to the fund investors. In this structure we contribute solar energy systems to an "owner" partnership entity in exchange for interests in the owner partnership and the fund investors contribute cash to a "tenant" partnership in exchange for interests in the tenant partnership, which in turn makes an investment in the owner partnership entity in exchange for interests in the owner partnership. The owner partnership uses the cash contributions received from the tenant partnership to purchase systems from us and/or fund installation of such systems. Under our existing JV inverted lease structure, a substantial portion of the value generated by the solar energy systems is provided to the fund investor for a specified period of time, which is generally based upon the period of time corresponding to the expiry of the recapture period associated with the Commercial ITCs. After that point in time, we receive substantially all of the value attributable to the long-term recurring customer payments and the other incentives. Generally, under the terms of each agreement, the investors' contributions include the value of Commercial ITCs earned or grants to be received by the fund investor. Any other proceeds are allocated on a pro rata basis to the fund investor and us in accordance with their ownership percentages. Since Sunrun has the power to control both the owner and tenant entities, both entities are included in our consolidated financial statements.

For all of our partnership flips and JV inverted leases, the redeemable noncontrolling interest is carried on our balance sheet at the greater of the redemption value or the amount calculated under the HLBV method. The HLBV method estimates the amount that, if the fund's assets were hypothetically sold at their book value, the investor would be entitled to receive according to the liquidation waterfall in the partnership agreement.

Key Operating Metrics

The following operating metrics are used by management to evaluate the performance of the business. Management believes these metrics provide investors with helpful information to determine the economic performance of the business activities in a period that would otherwise not be observable from historic GAAP measures. 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 that 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, we caution you that these estimates are based on a combination of assumptions that may prove to be inaccurate over time. Any inaccuracies could be material to our actual results when compared to our calculations. Please see the section titled "Risk Factors" in this Annual Report on Form 10-K for more information. Furthermore, other companies may calculate these metrics differently than we do now or in the future, which would reduce their usefulness as a comparative measure.

- *Networked Solar Energy Capacity* represents the aggregate megawatt production capacity of our solar energy systems, whether sold directly to customers or subject to executed Customer Agreements (i) for which we have confirmation that the systems are installed on the roof, subject to final inspection; (ii) in the case of certain system installations by our partners, for which we have accrued at least 80% of the expected project cost (inclusive of acquisitions of installed systems), or (iii) for multi-family and any other systems that have reached Notice to Proceed ("NTP"), measured on the percentage of the project that has been completed based on expected project cost. Systems that have met these criteria are considered to be deployed. We believe it is helpful to investors to evaluate networked solar energy capacity added during the period in order to measure the growth of our business as a whole, whether sold directly to customers or subject to executed Customer Agreements.

- *Gross Earning Assets* is calculated as Gross Earning Assets Contracted Period plus Gross Earning Assets Renewal Period.

    - *Gross Earning Assets Contracted Period* represents the present value of the remaining net cash flows (discounted at 6%) during the initial term of our Customer Agreements as of the measurement date. It is calculated as the present value of cash flows (discounted at 6%) we expect to receive from Subscribers in future periods, after deducting expected operating and maintenance costs based on the service agreements underlying each fund, equipment replacements costs, distributions to tax equity partners in consolidated joint venture partnership flip structures, and distributions to project equity investors. We include cash flows we expect to receive in future periods from state incentive and rebate programs, contracted sales of solar renewable energy credits, and awarded net cash flows from grid service programs with utility or grid operators.

    - *Gross Earning Assets Renewal Period* is the forecasted net present value we would receive upon or following the expiration of the initial Customer Agreement term but before the 30th anniversary of the system's activation (either in the form of cash payments during any applicable renewal period or a system purchase at the end of the initial term), for Subscribers as of the measurement date. We calculate the Gross Earning Assets Renewal Period amount at the expiration of the initial contract term assuming either a system purchase or a renewal, forecasting only a 30-year customer relationship (although the customer may renew for additional years, or purchase the system), at a contract rate equal to 90% of the customer's contractual rate in effect at the end of the initial contract term. After the initial contract term, our Customer Agreements typically automatically renew annually or for five years and the rate is initially set at up to a 10% discount to then-prevailing utility power prices.

- *Subscribers* represent the cumulative number of Customer Agreements for systems that have been recognized as deployments through the measurement date.

- *Customers* represent the cumulative number of deployments, from our inception through the measurement date. We believe that it is helpful to investors to evaluate customers added during the period in order to measure the growth of our business as a whole.

Gross Earning Assets is forecasted as of a specific date. It is forward-looking, and we use judgment in developing the assumptions used to calculate it. Factors that could impact Gross Earning Assets include, but are not limited to, customer payment defaults, or declines in utility rates or early termination of a contract in certain circumstances, including prior to installation. We believe it is useful for investors to evaluate the future expected cash flows from all customers that have been deployed through the respective measurement date, less estimated costs to maintain such systems and estimated distributions to tax equity partners in consolidated joint venture partnership flip

structures, and distributions to project equity investors. Various assumptions are made when calculating these metrics. Gross Earning Assets utilize a 6% unlevered discount rate (weighted average cost of capital or "WACC") to discount future cash flows to the present period. Furthermore, this metric assumes that customers renew after the initial contract period at a rate equal to 90% of the rate in effect at the end of the initial contract term. For Customer Agreements with 25-year initial contract terms, a 5-year renewal period is assumed. For a 20-year initial contract term, a 10-year renewal period is assumed. In all instances, we assume a 30-year customer relationship, although the customer may renew for additional years, or purchase the system. Estimated cost of servicing assets has been deducted and is estimated based on the service agreements underlying each fund.

	As of December 31,	
	2023	2022
Networked Solar Energy Capacity (megawatts)	6,689	5,667
Customers	933,275	797,296

	As of December 31,	
	2023	2022[1]
	(in thousands)	
Gross Earning Assets Contracted Period	$ 10,802,494	$ 8,878,718
Gross Earning Assets Renewal Period	3,364,026	3,546,821
Gross Earning Assets	$ 14,166,520	$ 12,425,539

(1) The Gross Earning Assets as of December 31, 2022 reflect the application of a 5% unlevered discount rate, which is consistent with the discount rate used during that period. If we had applied an unlevered discount rate of 6% as of December 31, 2022, the Gross Earning Assets Contracted Period would have been $8,151,849 and the Gross Earning Assets Renewal Period would have been $2,918,950.

The tables below provide a range of Gross Earning Asset amounts if different default, discount and purchase and renewal assumptions were used.

Gross Earning Assets Contracted Period:

	As of December 31, 2023				
	Discount rate				
Default rate	4%	5%	6%	7%	8%
	(in thousands)				
5%	$12,519,778	$11,438,761	$10,498,999	$ 9,678,502	$ 8,959,110
0%	$12,902,446	$11,778,785	$10,802,494	$ 9,950,578	$ 9,204,053

Gross Earning Assets Renewal Period:

	As of December 31, 2023				
	Discount rate				
Purchase or Renewal rate	4%	5%	6%	7%	8%
	(in thousands)				
80%	$ 4,320,286	$ 3,542,874	$ 2,917,420	$ 2,412,166	$ 2,002,368
90%	$ 4,978,970	$ 4,084,103	$ 3,364,026	$ 2,782,222	$ 2,310,243
100%	$ 5,637,653	$ 4,625,331	$ 3,810,629	$ 3,152,277	$ 2,618,117

Total Gross Earning Assets:

	As of December 31, 2023				
	Discount rate				
Purchase or Renewal rate	4%	5%	6%	7%	8%
	(in thousands)				
80%	$17,222,732	$15,321,659	$13,719,915	$12,362,744	$11,206,421
90%	$17,881,417	$15,862,889	$14,166,520	$12,732,800	$11,514,296
100%	$18,540,099	$16,404,116	$14,613,124	$13,102,855	$11,822,170

Critical Accounting Policies and Estimates

Our discussion and analysis of our financial condition and results of operations are based upon our financial statements, which have been prepared in accordance with generally accepted accounting principles in the United States ("GAAP"). GAAP requires us to make estimates and assumptions that affect the reported amounts of assets, liabilities, revenue, expenses and related disclosures. We base our estimates on historical experience and on various other assumptions that we believe to be reasonable under the circumstances. In many instances, we could have reasonably used different accounting estimates, and in other instances, changes in the accounting estimates are reasonably likely to occur from period-to-period. Actual results could differ significantly from our estimates. Our future financial statements will be affected to the extent that our actual results materially differ from these estimates. For further information on all of our significant accounting policies, see Note 2, *Summary of Significant Accounting Policies*, to our consolidated financial statements included elsewhere in this Annual Report on Form 10-K.

We believe that policies associated with our principles of consolidation, revenue recognition, goodwill, impairment of long-lived assets, provision for income taxes, business combinations and calculation of noncontrolling interests and redeemable noncontrolling interests have the greatest impact on our consolidated financial statements. Therefore, we consider these to be our critical accounting policies and estimates.

Principles of Consolidation

Our consolidated financial statements include our accounts and those of our subsidiaries in which we have a controlling financial interest. The typical condition for a controlling financial interest is holding a majority of the voting interests of an entity. However, a controlling financial interest may also exist in entities, such as VIEs, through arrangements that do not involve controlling financial interests. We consolidate any VIE of which we are the primary beneficiary, which is defined as the party that has (1) the power to direct the activities of a VIE that most significantly impact the VIE's economic performance and (2) the obligation to absorb losses or receive benefits of the VIE that could potentially be significant to the VIE. We evaluate our relationships with our VIEs on an ongoing basis to determine whether we continue to be the primary beneficiary. Our financial statements reflect the assets and liabilities of VIEs that we consolidate. All intercompany transactions and balances have been eliminated in consolidation. For further information regarding consolidation of our investment funds, see "—Investment Funds" above.

Revenue Recognition

We recognize revenue when control of goods or services is transferred to customers, in an amount that reflects the consideration we expect to be entitled to in exchange for those goods or services.

Customer Agreements and Incentives Revenue. Customer agreements and incentives revenue is primarily comprised of revenue from our Customer Agreements and sales of Commercial ITCs and SRECs to third parties.

We begin to recognize revenue from a Customer Agreement when PTO for the applicable solar energy system is given by the local utility company or on the date daily operation commences if utility approval is not required. For Customer Agreements that include a fixed fee per month which entitles the customer to any and all electricity generated by the system, we recognize revenue evenly over the time that we satisfy our performance obligations over the initial term of Customer Agreements. For Customer Agreements that charge a fixed price per kilowatt hour, revenue is recognized based on the actual amount of power generated at rates specified under the contracts. Customer Agreements typically have an initial term of 20 or 25 years. After the initial contract term, our Customer Agreements typically automatically renew annually or for five years.

We also apply for and receive SRECs associated with the energy generated by our solar energy systems and sell them to third parties in certain jurisdictions. SREC revenue is estimated net of any variable consideration related to possible liquidated damages if we were to deliver fewer SRECs than contractually committed, and is generally recognized upon delivery of the SRECs to the counterparty.

Certain upfront payments related to Customer Agreements and SRECs are deemed to have a financing component, and therefore increase both revenue and interest expense by the same amount over the term of the related agreement. The additional revenue is included in the total transaction price to be recorded over the term of the agreement and is recognized based on the timing of the delivery. The interest expense is recognized based upon an amortization schedule which typically decreases throughout the term of the related agreement.

For pass-through financing obligation funds, the value attributable to the Commercial ITCs is recognized in the period a solar system is granted PTO, at which point we have met our obligation to the investor. The Commercial ITCs are subject to recapture under the Internal Revenue Code (“Code”) if the underlying solar energy system either ceases to be a qualifying property or undergoes a change in ownership within five years of its placed-in-service date. The recapture amount decreases on the anniversary of the PTO date. We have not historically incurred a material recapture of Commercial ITCs, and do not expect to experience a material recapture of Commercial ITCs in the future.

Consideration from customers is considered variable due to the performance guarantee under Customer Agreements and liquidated damage provisions under SREC contracts in the event minimum deliveries are not achieved. Customer Agreements with a performance guarantee provide a credit to the customer if the system's cumulative production, as measured on various PTO anniversary dates, is below our guarantee of a specified minimum. Revenue is recognized to the extent it is probable that a significant reversal of such revenue will not occur. If our estimate of the future production shortfall amount for Customer Agreements with a performance guarantee was 10% higher, the additional reduction to revenue in the twelve months ended December 31, 2023 would have been less than $3.3 million. Our estimated production shortfall reduced revenue during the twelve months ended December 31, 2023 by less than $8.3 million more than the prior year's period. We have historically estimated an immaterial amount of liquidated damages pursuant to SREC contracts, and actual damages have not been materially different from estimates, nor material in amount during the years ended December 31, 2023, 2022 and 2021.

Solar Energy Systems and Product Sales. Solar energy systems sales are revenue from the sale of solar energy systems directly to customers. We generally recognize revenue from solar energy systems sold to customers when the solar energy system passes inspection by the authority having jurisdiction, which inspection generally occurs after installation but prior to PTO, at which time we have met the performance obligation in the contract. For solar energy system sales that include delivery obligations up until interconnection to the local power grid with permission to operate, we recognize revenue at PTO. Certain solar energy systems sold to customers include fees for extended warranty and maintenance services. These fees are recognized over the life of the service agreement.

Product sales revenue consists of revenue from the sale of solar panels, inverters, racking systems, roof repair, and other solar energy products sold to resellers, as well as the sale of customer leads to third parties, including our partners and other solar providers. Product sales revenue is recognized when control is transferred, generally upon shipment, or as services are delivered. Customer lead revenue is recognized at the time the lead is delivered.

Goodwill

Goodwill represents the excess of the purchase price over the fair value of assets acquired and liabilities assumed. Goodwill is reviewed for impairment at least annually or whenever events or changes in circumstances indicate that the carrying value may be impaired. We have determined that we operate as one reporting unit and our goodwill is tested for impairment at the enterprise level. We perform our annual impairment test of goodwill on October 1 of each fiscal year or whenever events or circumstances change or occur that would indicate that goodwill might be impaired. When assessing goodwill for impairment, we use qualitative and if necessary, quantitative methods in accordance with FASB ASC Topic 350, *Goodwill*. We also consider our enterprise value and if necessary, a discounted cash flow model, which involves assumptions and estimates, including our future financial performance, weighted average cost of capital and interpretation of currently enacted tax laws.

Circumstances that could indicate impairment and require us to perform a quantitative impairment test include a significant decline in our financial results, a significant decline in our enterprise value relative to our net book value, a sustained decline in our stock price, or an unanticipated change in competition or our market share and a significant change in our strategic plans. A sustained decrease in the price of our common stock is one of the qualitative factors to be considered as part of an impairment test when evaluating whether events or changes in circumstances may indicate that it is more likely than not that a potential goodwill impairment exists.

During the third quarter of fiscal 2023, consistent with other industry peers, our stock price continued to decline resulting in a decline in our market capitalization after consideration of a control premium below the book value of equity. We performed an interim quantitative assessment as of September 30, 2023 related to the recoverability of our goodwill for our one reporting unit. We estimated the fair value of our reporting unit primarily based on consideration of an income approach analysis. Under the income approach, our future cash flows were estimated and present valued based on a discount rate reflecting a market participant risk-adjusted rate of return. As of September 30, 2023, we concluded that the fair value of our one reporting unit did not exceed its carrying value with consideration of a control premium and recorded an impairment charge of $1.2 billion in our consolidated statements of operations.

For our interim quantitative assessment of goodwill as of September 30, 2023, we estimated the fair value of our one reporting unit and compared that fair value to its recorded carrying value. The assumptions and estimates used in the assessment include, among others, estimated future net annual contracted cash flows under our existing long term customer agreements, as well as future growth estimates which rely on management judgements. We also compared the total invested capital (including market capitalization) to the fair value of our reporting unit to assess the reasonableness of fair value after consideration of a control premium based on observable comparable company transactions.

We utilized varying discount rates depending on the risk associated and sensitivity with differing cash flow projections. Holding all other assumptions constant, a 50 basis point increase in the discount rate assumptions would have increased the goodwill impairment charge by approximately $0.5 billion. Should, among other events and circumstances, industry conditions deteriorate, the outlook for future operating results and cash flow decline or regulations change, costs of equity or debt capital increase, valuations for comparable public companies or comparable acquisition valuations decrease, or our market capitalization experience a further sustained decline below its book value, we may need to further reassess the recoverability of goodwill in future periods. Given the inherent estimation uncertainty in assumptions underlying a discounted cash flow analysis, actual conditions may differ materially from the Company’s estimates, which could result in additional impairment charges.

As of October 1, 2023, we conducted our annual goodwill impairment test. The test concluded that no additional impairment had occurred during the fourth quarter of 2023. To corroborate this conclusion, we compared the carrying value of our one reporting unit to our enterprise market capitalization after consideration of a reasonable control premium and concluded that there was no goodwill impairment during the fourth quarter of 2023.

Impairment of Long-Lived Assets

The carrying values of our long-lived assets, including solar energy systems, 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 would 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 value of each asset group 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, we amortize the remaining carrying value over the new shorter useful life. During the years ended December 31, 2023, 2022 and 2021, there were no indicators of impairment and therefore no cash flow analysis was performed.

Provision for Income Taxes

We account for income taxes under an asset and liability approach. Deferred income taxes 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. We consider all available evidence, both positive and negative, including historical levels of income, estimates of future taxable income, reversing taxable temporary differences, and ongoing tax planning strategies in assessing the need for a valuation allowance. 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. As the investment funds are consolidated by us, the gain on the sale of the solar energy systems is not recognized in the consolidated financial statements. However, this gain is recognized for tax reporting purposes. We 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 account for investment tax credits as a reduction of income tax expense in the year in which the credits arise (*i.e.* the flow-through method).

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 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.

Our policy is to include interest and penalties related to unrecognized tax benefits, if any, within the provision for taxes in the consolidated statements of operations.

Business Combinations

We allocate the fair value of purchase price to the tangible assets acquired, liabilities assumed and intangible assets acquired based on their estimated fair values. Any residual purchase price is recorded as goodwill. The allocation of the purchase price requires management to make significant estimates in determining the fair values of assets acquired and liabilities assumed, especially with respect to the solar energy systems acquired as part of our acquisition of Vivint Solar in 2020.

Significant estimates in valuing certain tangible assets include but are not limited to discount rates. These estimates are inherently uncertain and unpredictable.

Noncontrolling Interests and Redeemable Noncontrolling Interests

Our noncontrolling interests and redeemable noncontrolling interests represent fund investors' interests in the net assets of certain investment funds, which we consolidate, that we have entered into in order to finance the costs of solar energy facilities under Customer Agreements. We have determined that the provisions in the contractual arrangements of the investment funds represent substantive profit-sharing arrangements, which gives rise to the noncontrolling interests and redeemable noncontrolling interests. We have further determined that for all but two of these arrangements, the appropriate methodology for attributing income and loss to the noncontrolling interests and redeemable noncontrolling interests each period is a balance sheet approach using the HLBV method.

Attributing income and loss to the noncontrolling interests and redeemable noncontrolling interests under the HLBV method requires the use of various inputs to calculate the amounts that fund investors would receive upon a hypothetical liquidation. Changes in these inputs, including change in tax rates, can have a significant impact on the amount that fund investors would receive upon a hypothetical liquidation.

We classify certain noncontrolling interests with redemption features that are not solely within our control outside of permanent equity on our consolidated balance sheets. Redeemable noncontrolling 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 noncontrolling interests requires the use of significant assumptions and estimates such as projected future cash flows at the time the redemption feature can be exercised.

We determine the net income (loss) attributable to common stockholders by deducting from net loss, the net loss attributable to noncontrolling interests and redeemable noncontrolling interests in these funds. The net loss attributable to noncontrolling interests and redeemable noncontrolling interests represents the fund investors' allocable share in the results of operations of these investment funds. For these funds, we have determined that the provisions in the contractual arrangements represent substantive profit-sharing arrangements, where the allocations to the partners sometimes differ from the stated ownership percentages. We have further determined that, for these arrangements, the appropriate methodology for attributing income and loss to the noncontrolling interests and redeemable noncontrolling 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 noncontrolling interests and redeemable noncontrolling 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 provisions of these funds, assuming the net assets of the respective investment funds were liquidated at the carrying value determined in accordance with GAAP. The fund investors' interest in the results of operations of these investment funds is initially determined by calculating the difference in the noncontrolling interests and redeemable noncontrolling interests' claim under the HLBV method at the start and end of each reporting period, after taking into account any contributions and distributions between the fund and the fund investors and subject to the redemption provisions in certain funds.

The calculation of HLBV does not require estimates since each HLBV calculation is based upon the liquidation provisions of each fund's contractual agreement. The calculation of the redeemable noncontrolling interest balance involves estimates such as a discount rate used in net present value calculations, and customer default rates. If the assumptions used for each of these were 10% higher, the impact to the aggregate redeemable noncontrolling interest balance as of December 31, 2023 would be a reduction of $20.6 million.

Results of Operations

The results of operations presented below should be reviewed in conjunction with the consolidated financial statements and notes thereto included elsewhere in this Annual Report on Form 10-K. Our Annual Report on Form 10-K for the year ended December 31, 2022 includes a discussion and analysis of our financial condition and results of operations for the year ended December 31, 2021 in Item 7 of Part II, "Management's Discussion and Analysis of Financial Condition and Results of Operations."

	Year Ended December 31,	
	2023	2022
	(in thousands, except per share amounts)	
Revenue:		
Customer agreements and incentives	$ 1,186,706	$ 983,047
Solar energy systems and product sales	1,073,107	1,338,375
Total revenue	2,259,813	2,321,422
Operating expenses:		
Cost of customer agreements and incentives	1,077,114	844,162
Cost of solar energy systems and product sales	1,019,638	1,178,548
Sales and marketing	740,821	745,386
Research and development	21,816	20,907
General and administrative	221,067	194,611
Goodwill impairment	1,158,000	—
Total operating expenses	4,238,456	2,983,614
Loss from operations	(1,978,643)	(662,192)
Interest expense, net	(652,989)	(445,819)
Other (expense) income, net	(63,900)	260,657
Loss before income taxes	(2,695,532)	(847,354)
Income tax (benefit) expense	(12,691)	2,291
Net loss	(2,682,841)	(849,645)
Net loss attributable to noncontrolling interests and redeemable noncontrolling interests	(1,078,344)	(1,023,022)
Net (loss) income attributable to common stockholders	$ (1,604,497)	$ 173,377
Net (loss) income per share attributable to common stockholders		
Basic	$ (7.41)	$ 0.82
Diluted	$ (7.41)	$ 0.80
Weighted average shares used to compute net (loss) income per share attributable to common stockholders		
Basic	216,642	211,347
Diluted	216,642	219,157

Comparison of the Years Ended December 31, 2023 and 2022

Revenue

	Year Ended December 31,		Change	
	2023	2022	$	%
	(in thousands)			
Customer agreements	$1,077,099	$ 872,298	$ 204,801	23 %
Incentives	109,607	110,749	(1,142)	(1)%
Customer agreements and incentives	1,186,706	983,047	203,659	21 %
Solar energy systems	656,408	913,904	(257,496)	(28)%
Products	416,699	424,471	(7,772)	(2)%
Solar energy systems and product sales	1,073,107	1,338,375	(265,268)	(20)%
Total revenue	$2,259,813	$2,321,422	$ (61,609)	(3)%

Customer Agreements and Incentives. The $204.8 million increase in Revenue from Customer Agreements was primarily due to new systems placed in service in 2023 and a full year of revenue recognized in 2023 for systems placed in service in 2022 versus only a partial amount of such revenue related to the period in which the assets were in service in 2022. Revenue from incentives, which primarily consisted of the sale of SRECs, decreased by $1.1 million when compared to the prior year related to the timing and volume of SREC sales which were responsive to market conditions.

Solar Energy Systems and Product Sales. Revenue from solar energy systems sales decreased by $257.5 million compared to the prior year primarily due to an increase in the proportion of customers choosing to enter into a Customer Agreement versus purchasing a system outright using a loan, likely due to increased interest rates. Product sales decreased by $7.8 million compared to the prior year primarily due to the lower average sales price of solar energy products, as well as lower sales volume of solar energy products to installers of solar energy systems compared to the prior year, due to easing of supply chain constraints.

Operating Expenses

	Year Ended December 31,		Change	
	2023	2022	$	%
	(in thousands)			
Cost of customer agreements and incentives	$1,077,114	$ 844,162	$ 232,952	28 %
Cost of solar energy systems and product sales	1,019,638	1,178,548	(158,910)	(13)%
Sales and marketing	740,821	745,386	(4,565)	(1)%
Research and development	21,816	20,907	909	4 %
General and administrative expense	221,067	194,611	26,456	14 %
Goodwill impairment	1,158,000	—	1,158,000	100 %
Total operating expenses	$4,238,456	$2,983,614	$1,254,842	42 %

Cost of Customer Agreements and Incentives. The $233.0 million increase in Cost of customer agreements and incentives was primarily due to the new systems placed in service in 2023, plus a full year of costs recognized in 2023 for systems placed in service in 2022 versus only a partial amount of such expenses related to the period in which the assets were in service in 2022.

The Cost of customer agreements and incentives increased to 91% of customer agreements and incentives revenue during 2023, from 86% in the prior year. This increase is primarily due to a higher proportion of customers choosing to enter into Customer Agreements versus purchasing a system outright. Customer Agreements fulfillment incurs upfront non-capitalizable costs for building the system which do not recur during the agreement period over which the revenue is recognized.

Cost of Solar Energy Systems and Product Sales. There was a $158.9 million decrease in Cost of solar energy systems and product sales, which was primarily due to the corresponding net decrease in the solar energy systems and product sales discussed above.

The Cost of solar energy systems and product sales increased to 95% of solar energy systems and product sales revenue during 2023, when compared with 88% in the prior year, primarily as a result of sales price increases lagging cost increases, as well as volume pricing granted in our distribution business.

Sales and Marketing Expense. The $4.6 million decrease in Sales and marketing expense was primarily attributable to decreases in headcount driving lower employee compensation and costs to acquire customers through our sales lead generating partners. Included in sales and marketing expense were $56.3 million and $38.7 million of amortization of costs to obtain Customer Agreements for 2023 and 2022, respectively.

Research and Development Expense. The $0.9 million increase in Research and development expense was primarily attributable to an increase in support related consulting costs.

General and Administrative Expense. The $26.5 million increase in General and administrative expenses was primarily attributable to an increase in headcount driving higher employee compensation costs. Additionally, there

were increases related to information technology related consulting costs, when compared to the prior year period. Included in general and administrative expense were $7.458 million and $5.364 million of amortization of intangibles for 2023 and 2022, respectively.

Goodwill impairment. The $1.2 billion increase in Goodwill impairment expense related to an impairment charge of $1.2 billion that was a result of an interim impairment test performed during the third quarter of 2023. For further detail, see Note 2, *Summary of Significant Accounting Policies* to our consolidated financial statement included elsewhere in this Annual Report on Form 10-K.

Non-Operating Expenses

	Year Ended December 31,		Change	
	2023	2022	$	%
	(in thousands)			
Interest expense, net	$ (652,989)	$ (445,819)	$ (207,170)	46 %
Other (expense) income, net	(63,900)	260,657	(324,557)	(125)%
Total interest and other expense, net	$ (716,889)	$ (185,162)	$ (531,727)	287 %

Interest expense, net. The increase in Interest expense, net of $207.2 million is primarily related to additional non-recourse debt entered into in 2023. Included in net interest expense is $31.2 million and $28.3 million of non-cash interest recognized under Customer Agreements that have a significant financing component for 2023 and 2022, respectively.

Other (expense) income, net. The increase in other expense of $324.6 million relates primarily to a $58.7 million loss on an equity investment in Lunar Energy Inc. (“Lunar Energy”) during 2023, compared with a $47.3 million gain on this same equity investment in Lunar Energy during 2022, as well as to gains on derivatives during 2022, with no such comparable activity in 2023.

Income Tax (Benefit) Expense

	Year Ended December 31,		Change	
	2023	2022	$	%
	(in thousands)			
Income tax (benefit) expense	$ (12,691)	$ 2,291	$ (14,982)	(654)%

The decrease in Income tax (benefit) expense of $15.0 million primarily relates to an increase in tax benefit related to a higher pre-tax loss, which was offset by goodwill impairment, an increase in valuation allowance on certain federal and state tax credits and net operating losses, and an increase in noncontrolling interest and redeemable noncontrolling interests.

Given our net operating loss carryforwards as of December 31, 2023, we do not expect to pay income tax, including in connection with our 2023 income tax provision, until our net operating losses are fully utilized. As of December 31, 2023, we had net operating loss carryforwards for federal and state income tax purposes of approximately $720.7 million and $3.3 billion, respectively, which will begin to expire in 2028 for federal purposes and in 2024 for state purposes. In addition, federal and certain state net operating loss carryforwards generated in tax years beginning after December 31, 2017 total $2.0 billion and $357.1 million, respectively, and have indefinite carryover periods and do not expire.

Net Loss Attributable to Noncontrolling Interests and Redeemable Noncontrolling Interests

	Year Ended December 31,		Change	
	2023	2022	$	%
	(in thousands)			
Net loss attributable to noncontrolling interests and redeemable noncontrolling interests	$(1,078,344)	$(1,023,022)	$ (55,322)	5 %

Net loss attributable to noncontrolling interests and redeemable noncontrolling interests was primarily the result of an addition of six new investment funds since December 31, 2022, for which the HLBV method was used in determining the amount of net loss attributable to noncontrolling interests. Investment funds generally allocate more loss to the noncontrolling interest in the first several years after fund formation.

Liquidity and Capital Resources

As of December 31, 2023, we had cash of $678.8 million, which consisted of cash held in checking and savings accounts with financial institutions. We finance our operations mainly through a variety of financing fund arrangements that we have formed with fund investors, cash generated from our sources of revenue and borrowings from secured credit facilities arrangements with syndicates of banks and from secured, long-term non-recourse loan arrangements. In 2023, we received $1.0 billion of new commitments on secured credit facilities arrangements with syndicates of banks and $0.8 billion of commitments from secured, long-term non-recourse loan arrangements. Our principal uses of cash are funding our business, including the costs of acquisition and installation of solar energy systems, satisfaction of our obligations under our debt instruments and other working capital requirements. As of December 31, 2023, we had outstanding borrowings of $539.5 million on our $600.0 million credit facility maturing in January 2025. In February 2024, we amended one of our subsidiary's senior secured credit facility to, among other things, increase the total commitments from $1.8 billion to $2.35 billion and extend the maturity date from April 2025 to April 2028. In February 2024, we amended our bank line of credit to, among other things, reduce the total commitments from $600.0 million to $447.5 million, and to extend the maturity date from January 2025 to November 2025. This maturity date can be further extended to March 2027, if we meet certain liquidity tests as of September 30, 2024. For additional details, see the description of "Senior Secured Credit Facility" and "Line of Credit" in Item 9B.Other Information.

Additionally, we have purchase commitments, which have the ability to be canceled without significant penalties, with multiple suppliers to purchase $366.4 million of photovoltaic modules, inverters and batteries by the end of the first quarter of 2025. In January 2021, we issued $400.0 million of convertible senior notes with a maturity date of February 1, 2026, for net proceeds of approximately $389.0 million. Our business model requires substantial outside financing arrangements to grow the business and facilitate the deployment of additional solar energy systems. The solar energy systems that are operational are expected to generate a positive return rate over the term of the Customer Agreement, typically 20 or 25 years. However, in order to grow, we will continue to be dependent on financing from outside parties. If financing is not available to us on acceptable terms if and when needed, we may be required to reduce planned spending, which could have a material adverse effect on our operations. While there can be no assurances, we anticipate raising additional required capital from new and existing investors. We believe our cash, investment fund commitments and available borrowings as further described below will be sufficient to meet our anticipated cash needs for at least the next 12 months. We believe we will meet longer-term expected future cash requirements and obligations through a combination of cash flows from operating activities, available cash balances, and available credit via our credit facilities. The following table summarizes our cash flows for the periods indicated:

	Year Ended December 31,	
	2023	2022
	(in thousands)	
Consolidated cash flow data:		
Net cash used in operating activities	$ (820,740)	$ (848,793)
Net cash used in investing activities	(2,613,143)	(2,086,066)
Net cash provided by financing activities	3,468,698	3,037,451
Net increase in cash	$ 34,815	$ 102,592

Operating Activities

During 2023, we used $820.7 million in net cash from operating activities. The driver of our operating cash outflow consisted of the cost of our revenue, as well as sales, marketing and general and administrative costs. During 2023, our operating cash outflows were $625.5 million from our net loss excluding non-cash and non-operating items. Changes in working capital resulted in a net cash outflow of $195.3 million.

During 2022, we used $848.8 million in net cash from operating activities. The driver of our operating cash outflow consisted of the cost of our revenue, as well as sales, marketing and general and administrative costs. During 2022, our operating cash outflows were $438.1 million from our net loss excluding non-cash and non-operating items. Changes in working capital resulted in a net cash outflow of $410.8 million.

Investing Activities

During 2023, we used $2.6 billion in cash in investing activities. The majority was used to design, acquire and install solar energy systems and components under our long-term Customer Agreements. Included within cash used in investing activities during 2023, was a $5.0 million contribution we made as an additional investment in Lunar Energy.

During 2022, we used $2.1 billion in cash in investing activities. The majority was used to design, acquire and install solar energy systems and components under our long-term Customer Agreements. Included within cash used in investing activities during 2022, was a $75.0 million contribution we made as an additional investment in Lunar Energy.

Financing Activities

During 2023, we generated $3.5 billion from financing activities. This was primarily driven by $1.4 billion in net proceeds from fund investors, $2.2 billion in net proceeds from debt, $22.6 million in net proceeds from stock-based awards activity, offset by $1.5 million in repurchase of convertible senior notes, $46.3 million in acquisition of noncontrolling interests and $23.3 million in repayments under finance lease obligations.

During 2022, we generated $3.0 billion from financing activities. This was primarily driven by $1.2 billion in net proceeds from fund investors, $1.9 billion in net proceeds from debt, $32.9 million in net proceeds from stock-based awards activity, offset by $42.6 million in acquisition of noncontrolling interests and $14.1 million in repayments under finance lease obligations.

Debt, Equity, and Financing Fund Commitments

Debt Instruments

For a discussion of the terms and conditions of debt instruments and changes thereof in the period, refer to Note 10, *Indebtedness,* to our consolidated financial statements included elsewhere in this Annual Report on Form 10-K.

Investment Fund Commitments

As of December 31, 2023, we had committed and available capital of approximately $386.9 million that may only be used to purchase and install solar energy systems. We intend to establish new investment funds in the future, and we may also use debt, equity or other financing strategies to finance our business.

Recent Accounting Pronouncements

See Note 2, *Summary of Significant Accounting Policies,* to our consolidated financial statements included elsewhere in this Annual Report on Form 10-K.

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

We are exposed to certain market risks in the ordinary course of our business. Our primary exposure includes changes in interest rates because certain borrowings bear interest at floating rates based on LIBOR or SOFR, as applicable, plus a specified margin. We sometimes manage our interest rate exposure on floating-rate debt by entering into derivative instruments to hedge all or a portion of our interest rate exposure in certain debt facilities. We do not enter into any derivative instruments for trading or speculative purposes. Changes in economic conditions could result in higher interest rates, thereby increasing our interest expense and operating expenses and reducing funds available for capital investments, operations and other purposes. A hypothetical 10% increase in our interest rates on our variable rate debt facilities would have increased our interest expense by $11.7 million and $6.0 million for the year ended December 31, 2023 and 2022, respectively.

Item 8. Financial Statements and Supplementary Data.

INDEX TO CONSOLIDATED FINANCIAL STATEMENTS

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Report of Independent Registered Public Accounting Firm

To the Stockholders and the Board of Directors of Sunrun Inc.

Opinion on the Financial Statements

We have audited the accompanying consolidated balance sheets of Sunrun Inc. (the Company) as of December 31, 2023 and 2022, the related consolidated statements of operations, comprehensive (loss) income, redeemable noncontrolling interests and stockholders' equity and cash flows for each of the three years in the period ended December 31, 2023, 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, 2023 and 2022, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2023, in conformity with U.S. generally accepted accounting principles.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the Company's internal control over financial reporting as of December 31, 2023, based on criteria established in Internal Control-Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 framework), and our report dated February 21, 2024 expressed an unqualified opinion thereon.

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 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. 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.

Critical Audit Matters

The critical audit matters communicated below are matters arising from the current period audit of the financial statements that were communicated or required to be communicated to the audit committee and that: (1) relate to accounts or disclosures that are material to the financial statements and (2) involved our especially challenging, subjective or complex judgments. The communication of critical audit matters does not alter in any way our opinion on the consolidated financial statements, taken as a whole, and we are not, by communicating the critical audit matters below, providing separate opinions on the critical audit matters or on the accounts or disclosures to which they relate.

Noncontrolling Interests and Redeemable Noncontrolling Interests

Description of matter

At December 31, 2023, noncontrolling interests were $1.0 billion and redeemable noncontrolling interests were $0.7 billion. As explained in Note 2 to the consolidated financial statements, noncontrolling interests and redeemable noncontrolling interests represent investors' interests in the net assets of the tax equity funds that the Company has created to finance the cost of its solar energy systems subject to the Company's Customer Agreements. The Company has determined that the contractual provisions in the funding arrangements represent substantive profit sharing arrangements. The Company has further determined that the appropriate methodology for attributing income and loss to the noncontrolling interests and redeemable noncontrolling interests each period is a balance sheet approach referred to as the hypothetical liquidation at book value ("HLBV") method.

Auditing the noncontrolling interests and redeemable noncontrolling interests is complex due to the volume of tax equity funds and the allocation of the net income or loss to the equity holders. Each HLBV calculation is based upon the liquidation provisions of each fund's contractual agreement used to calculate the amount of income or loss to be attributed to the noncontrolling member.

How We Addressed the Matter in Our Audit

We obtained an understanding, evaluated the design and tested the operating effectiveness of internal controls that address the risks of material misstatement relating to the noncontrolling interests and redeemable noncontrolling interests. This included evaluating controls over establishing each HLBV model and management's review of each significant input into the HLBV models for compliance with the contractual provisions of such funding arrangements, the completeness and accuracy of underlying data, the calculation of tax capital accounts, and the mathematical accuracy of the HLBV models.

To test the noncontrolling interests and redeemable noncontrolling interests, our audit procedures included, among others, examining the HLBV models for compliance with contractual provisions in the funding arrangements. We tested the completeness and accuracy of the underlying data used in the HLBV models. We involved tax professionals to assist in evaluating the calculation of the tax capital accounts in accordance with the tax code, as well as compliance with contractual provisions in the funding arrangements. We also tested the mathematical accuracy of management's HLBV models.

Goodwill

Description of matter

As reflected in the Company's Consolidated Financial Statements, at December 31, 2023, the Company's goodwill was $3.1 billion. As disclosed in Note 2 to the Consolidated Financial Statements, goodwill is evaluated for impairment annually on October 1 or when indicators of impairment exist which suggest that the carrying value may not be recoverable. In 2023, the Company determined there was an indicator of impairment for sustained decline in stock price and performed an interim quantitative assessment. Based on this quantitative assessment, the Company concluded that goodwill for its one reporting unit was partially impaired and recognized a goodwill impairment charge of $1.2 billion in the third quarter of 2023.

Auditing management's third quarter quantitative goodwill impairment test was subjective and required the involvement of a specialist due to the measurement uncertainty in determining fair value of the reporting unit. In particular, the fair value estimate was sensitive to significant assumptions in discount rates applied to estimated future cashflows which may be affected by future market conditions.

How We Addressed the Matter in Our Audit	We obtained an understanding, evaluated the design and tested the operating effectiveness of controls over the Company's goodwill impairment assessment process. Our procedures included testing controls over management's review of the significant assumptions in estimating the fair value of the reporting unit and the related evaluation of management's specialist. We also tested controls over management review of the reconciliation of the estimated fair value of the reporting unit to the total invested capital (including market capitalization) of the Company. To test the estimated fair value of the reporting unit, specifically using the income approach, we performed audit procedures that included, among others, assessing the valuation methodology used to determine the fair value, testing the significant assumptions discussed above and testing the completeness and accuracy of the underlying data used by the Company. For example, we evaluated management's forecasted cash flows used in the fair value estimate by comparing those assumptions to the historical results of the Company and current industry trends. Additionally, we performed sensitivity analyses of the significant assumptions to evaluate the effect on the fair value estimate of the reporting unit. We also audited the reconciliation of that fair value estimate to the total invested capital (including market capitalization) of its reporting unit in consideration of a control premium based on observable comparable company transactions. We also involved a valuation specialist to assist in evaluating the significant assumptions in the fair value estimate.

/s/ Ernst & Young LLP

We have served as the Company's auditor since 2010.

San Francisco, California
February 21, 2024

Report of Independent Registered Public Accounting Firm

To the Stockholders and the Board of Directors of Sunrun Inc.

Opinion on Internal Control Over Financial Reporting

We have audited Sunrun Inc.'s internal control over financial reporting as of December 31, 2023, based on criteria established in Internal Control - Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 framework) (the COSO criteria). In our opinion, Sunrun Inc. (the Company) maintained, in all material respects, effective internal control over financial reporting as of December 31, 2023, based on the COSO criteria.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the 2023 consolidated financial statements of the Company and our report dated February 21, 2024 expressed an unqualified opinion thereon.

Basis for Opinion

The Company's management is responsible for maintaining effective internal control over financial reporting and for its assessment of the effectiveness of internal control over financial reporting included in the accompanying Management's Report on Internal Control over Financial Reporting. Our responsibility is to express an opinion on the Company's internal control over financial reporting based on our audit. We are a public accounting firm registered with the 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 audit in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects.

Our audit included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, testing and evaluating the design and operating effectiveness of internal control based on the assessed risk, and performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion.

Definition and Limitations of Internal Control Over Financial Reporting

A company's internal control over financial reporting is a process designed 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. A company's internal control over financial reporting includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, 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.

/s/ Ernst & Young LLP

San Francisco, California
February 21, 2024

Sunrun Inc.
Consolidated Balance Sheets
(In Thousands, Except Share Par Values)

	As of December 31,	
	2023	**2022**
Assets		
Current assets:		
Cash	$ 678,821	$ 740,508
Restricted cash	308,869	212,367
Accounts receivable (net of allowances for credit losses of $19,042 and $13,381 as of December 31, 2023 and 2022, respectively)	172,001	214,255
Inventories	459,746	783,904
Prepaid expenses and other current assets	262,822	146,609
Total current assets	1,882,259	2,097,643
Restricted cash	148	148
Solar energy systems, net	13,028,871	10,988,361
Property and equipment, net	149,139	67,439
Goodwill	3,122,168	4,280,169
Other assets	2,267,652	1,835,045
Total assets [(1)]	$ 20,450,237	$ 19,268,805
Liabilities and total equity		
Current liabilities:		
Accounts payable	$ 230,723	$ 339,166
Distributions payable to noncontrolling interests and redeemable noncontrolling interests	35,180	32,050
Accrued expenses and other liabilities	499,225	406,466
Deferred revenue, current portion	128,600	183,719
Deferred grants, current portion	8,199	8,252
Finance lease obligations, current portion	22,053	11,444
Non-recourse debt, current portion	547,870	157,810
Pass-through financing obligation, current portion	16,309	16,544
Total current liabilities	1,488,159	1,155,451
Deferred revenue, net of current portion	1,067,461	912,254
Deferred grants, net of current portion	195,724	201,094
Finance lease obligations, net of current portion	68,753	17,302
Line of credit	539,502	505,158
Non-recourse debt, net of current portion	9,191,689	7,343,299
Convertible senior notes	392,867	392,882
Pass-through financing obligation, net of current portion	278,333	289,011
Other liabilities	190,866	140,290
Deferred tax liabilities	122,870	133,047
Total liabilities [(1)]	13,536,224	11,089,788
Commitments and contingencies (Note 18)		
Redeemable noncontrolling interests	676,177	609,702
Stockholders' equity:		
Preferred stock, $0.0001 par value—authorized, 200,000 shares as of December 31, 2023 and 2022; no shares issued and outstanding as of December 31, 2023 and 2022	—	—
Common stock, $0.0001 par value—authorized, 2,000,000 shares as of December 31, 2023 and 2022; issued and outstanding, 219,392 and 214,184 shares as of December 31, 2023 and 2022, respectively	22	21
Additional paid-in capital	6,609,229	6,470,194
Accumulated other comprehensive loss	54,676	67,109
Retained earnings	(1,433,699)	170,798
Total stockholders' equity	5,230,228	6,708,122
Noncontrolling interests	1,007,608	861,193
Total equity	6,237,836	7,569,315
Total liabilities, redeemable noncontrolling interests and total equity	$ 20,450,237	$ 19,268,805

(1) The Company's consolidated assets as of December 31, 2023 and 2022 include $11,538,540 and $10,031,506, respectively, in assets of variable interest entities, or "VIEs", that can only be used to settle obligations of the VIEs. Solar energy systems, net, as of December 31, 2023 and 2022 were $10,469,093 and $8,968,835, respectively; cash as of December 31, 2023 and 2022 were $254,522 and $457,005, respectively; restricted cash as of December 31, 2023 and 2022 were $48,169 and $44,514, respectively; accounts receivable, net as of December 31, 2023 and 2022 were $76,249 and $66,847, respectively; inventories as of December 31, 2023 and 2022 of $150,065 and $193,836, respectively; prepaid expenses and other current assets as of December 31, 2023 and 2022 were $161,414 and $12,698, respectively and other assets as of December 31, 2023 and 2022 were $379,028 and $287,771, respectively. The Company's consolidated liabilities as of December 31, 2023 and 2022 include $2,417,984 and $2,227,002, respectively, in liabilities of VIEs whose creditors have no recourse to the Company. These liabilities include accounts payable as of December 31, 2023 and 2022 of $12,187 and $36,315, respectively; distributions payable to noncontrolling interests and redeemable noncontrolling interests as of December 31, 2023 and 2022 of $35,181 and $32,051, respectively; accrued expenses and other liabilities as of December 31, 2023 and 2022 of $185,766 and $32,512, respectively; deferred revenue as of December 31, 2023 and 2022 of $708,413 and $621,457, respectively; deferred grants as of December 31, 2023 and 2022 of $0 and $0, respectively; non-recourse debt as of December 31, 2023 and 2022 of $1,459,621 and $1,489,407, respectively; and other liabilities as of December 31, 2023 and 2022 of $16,816 and $15,260, respectively.

The accompanying notes are an integral part of these consolidated financial statements.

Sunrun Inc.
Consolidated Statements of Operations
(In Thousands, Except Per Share Amounts)

	Year Ended December 31,		
	2023	**2022**	**2021**
Revenue:			
Customer agreements and incentives	$ 1,186,706	$ 983,047	$ 826,564
Solar energy systems and product sales	1,073,107	1,338,375	783,390
Total revenue	2,259,813	2,321,422	1,609,954
Operating expenses:			
Cost of customer agreements and incentives	1,077,114	844,162	699,102
Cost of solar energy systems and product sales	1,019,638	1,178,548	666,370
Sales and marketing	740,821	745,386	622,961
Research and development	21,816	20,907	23,165
General and administrative	221,067	194,611	264,543
Goodwill impairment	1,158,000	—	—
Total operating expenses	4,238,456	2,983,614	2,276,141
Loss from operations	(1,978,643)	(662,192)	(666,187)
Interest expense, net	(652,989)	(445,819)	(327,700)
Other (expense) income, net	(63,900)	260,657	22,628
Loss before income taxes	(2,695,532)	(847,354)	(971,259)
Income tax (benefit) expense	(12,691)	2,291	9,271
Net loss	(2,682,841)	(849,645)	(980,530)
Net loss attributable to noncontrolling interests and redeemable noncontrolling interests	(1,078,344)	(1,023,022)	(901,107)
Net (loss) income attributable to common stockholders	$ (1,604,497)	$ 173,377	$ (79,423)
Net (loss) income per share attributable to common stockholders			
Basic	$ (7.41)	$ 0.82	$ (0.39)
Diluted	$ (7.41)	$ 0.80	$ (0.39)
Weighted average shares used to compute net (loss) income per share attributable to common stockholders			
Basic	216,642	211,347	205,132
Diluted	216,642	219,157	205,132

The accompanying notes are an integral part of these consolidated financial statements.

Sunrun Inc.
Consolidated Statements of Comprehensive (Loss) Income
(In Thousands)

	Year Ended December 31,		
	2023	**2022**	**2021**
Net (loss) income attributable to common stockholders	$ (1,604,497)	$ 173,377	$ (79,423)
Unrealized gain on derivatives, net of income taxes	14,482	140,805	18,496
Adjustment for net (gain) loss on derivatives recognized into earnings, net of income taxes	(26,915)	(646)	15,209
Other comprehensive (loss) income	(12,433)	140,159	33,705
Comprehensive (loss) income	$ (1,616,930)	$ 313,536	$ (45,718)

The accompanying notes are an integral part of these consolidated financial statements.

Sunrun Inc.

Consolidated Statements of Redeemable Noncontrolling Interests and Stockholders' Equity

(In Thousands)

	Redeemable Noncontrolling Interests	Common Stock		Additional Paid-In Capital	Accumulated Other Comprehensive (Loss) Income	Retained Earnings (Accumulated Deficit)	Total Stockholders' Equity	Noncontrolling Interests	Total Equity
		Shares	Amount						
Balance - December 31, 2020	$ 560,461	201,406	$ 20	$ 6,107,802	$ (106,755)	$ 76,844	$ 6,077,911	$ 650,999	$ 6,728,910
Exercise of stock options	—	2,046	—	19,326	—	—	19,326	$ —	19,326
Issuance of restricted stock units, net of tax withholdings	—	3,749	1	—	—	—	1	—	1
Shares issued in connection with the Employee Stock Purchase Plan	—	975	—	16,812	—	—	16,812	—	16,812
Stock-based compensation	—	—	—	221,857	—	—	221,857	—	221,857
Contributions from redeemable noncontrolling interests and noncontrolling interests	157,127	—	—	—	—	—	—	1,081,605	1,081,605
Distributions to redeemable noncontrolling interests and noncontrolling interests	(63,280)	—	—	—	—	—	—	(136,141)	(136,141)
Net loss	(35,908)	—	—	—	—	(79,423)	(79,423)	(865,199)	(944,622)
Capped call transaction	—	—	—	(28,000)	—	—	(28,000)	—	(28,000)
Acquisition of noncontrolling interest	(23,427)	—	—	(7,453)	—	—	(7,453)	(8,386)	(15,839)
Other comprehensive income, net of taxes	—	—	—	—	33,705	—	33,705	—	33,705
Balance - December 31, 2021	594,973	208,176	21	6,330,344	(73,050)	(2,579)	6,254,736	722,878	6,977,614
Exercise of stock options	—	1,842	—	13,772	—	—	13,772	—	13,772
Issuance of restricted stock units, net of tax withholdings	—	2,968	—	—	—	—	—	—	—
Shares issued in connection with the Employee Stock Purchase Plan	—	1,198	—	19,091	—	—	19,091	—	19,091
Stock-based compensation	—	—	—	123,050	—	—	123,050	—	123,050
Contributions from redeemable noncontrolling interests and noncontrolling interests	89,088	—	—	—	—	—	—	1,325,705	1,325,705
Distributions to redeemable noncontrolling interests and noncontrolling interests	(67,732)	—	—	—	—	—	—	(150,369)	(150,369)
Net (loss) income	(5,558)	—	—	—	—	173,377	173,377	(1,017,464)	(844,087)
Acquisition of noncontrolling interests	(1,069)	—	—	(16,063)	—	—	(16,063)	(19,557)	(35,620)
Other comprehensive income, net of taxes	—	—	—	—	140,159	—	140,159	—	140,159
Balance - December 31, 2022	609,702	214,184	21	6,470,194	67,109	170,798	6,708,122	861,193	7,569,315
Exercise of stock options	—	838	—	4,304	—	—	4,304	—	4,304
Issuance of restricted stock units, net of tax withholdings	—	2,836	1	—	—	—	1	—	1
Shares issued in connection with the Employee Stock Purchase Plan	—	1,534	—	18,305	—	—	18,305	—	18,305
Stock-based compensation	—	—	—	111,280	—	—	111,280	—	111,280
Contributions from redeemable noncontrolling interests and noncontrolling interests	185,397	—	—	—	—	—	—	1,387,002	1,387,002
Distributions to redeemable noncontrolling interests and noncontrolling interests	(68,310)	—	—	—	—	—	—	(159,876)	(159,876)
Net loss	(30,601)	—	—	—	—	(1,604,497)	(1,604,497)	(1,047,743)	(2,652,240)
Acquisition of noncontrolling interests	(20,011)	—	—	5,146	—	—	5,146	(32,968)	(27,822)
Other comprehensive loss, net of taxes	—	—	—	—	(12,433)	—	(12,433)	—	(12,433)
Balance - December 31, 2023	$ 676,177	219,392	$ 22	$ 6,609,229	$ 54,676	$ (1,433,699)	$ 5,230,228	$ 1,007,608	$ 6,237,836

The accompanying notes are an integral part of these consolidated financial statements

Sunrun Inc.
Consolidated Statements of Cash Flows
(In Thousands)

	Year Ended December 31,		
	2023	2022	2021
Operating activities:			
Net loss	$ (2,682,841)	$ (849,645)	$ (980,530)
Adjustments to reconcile net loss to net cash used in operating activities:			
Depreciation and amortization, net of amortization of deferred grants	531,669	451,046	388,096
Goodwill impairment	1,158,000	—	—
Deferred income taxes	(12,716)	2,291	9,607
Stock-based compensation expense	111,781	110,633	211,000
Interest on pass-through financing obligations	19,504	20,076	21,431
Reduction in pass-through financing obligations	(40,352)	(41,164)	(42,309)
Unrealized gain on derivatives	28,105	(184,904)	(21,686)
Other noncash items	261,390	53,651	82,286
Changes in operating assets and liabilities:			
Accounts receivable	15,748	(86,762)	(62,124)
Inventories	324,158	(277,085)	(223,774)
Prepaid expenses and other current assets	(476,628)	(378,807)	(377,505)
Accounts payable	(108,785)	40,458	66,932
Accrued expenses and other liabilities	(56,473)	64,122	33,195
Deferred revenue	106,700	227,297	78,195
Net cash used in operating activities	(820,740)	(848,793)	(817,186)
Investing activities:			
Payments for the costs of solar energy systems	(2,587,183)	(1,992,863)	(1,677,609)
Purchase of equity investment	(5,000)	(75,000)	—
Purchases of property and equipment, net	(20,960)	(18,203)	(8,576)
Net cash used in investing activities	(2,613,143)	(2,086,066)	(1,686,185)
Financing activities:			
Proceeds from state tax credits, net of recapture	4,033	—	—
Proceeds from line of credit	1,165,900	1,165,267	738,046
Repayment of line of credit	(1,131,556)	(871,175)	(757,640)
Proceeds from issuance of convertible senior notes, net of capped call transaction	—	—	372,000
Repurchase of convertible senior notes	(1,545)	—	—
Proceeds from issuance of non-recourse debt	3,745,580	3,428,830	2,186,990
Repayment of non-recourse debt	(1,575,527)	(1,799,428)	(856,091)
Payment of debt fees	(47,342)	(62,994)	(53,793)
Proceeds from pass-through financing and other obligations, net	8,812	3,645	10,032
Repayment of pass-through financing obligation	—	—	(18,050)
Payment of finance lease obligations	(23,279)	(14,146)	(12,352)
Contributions received from noncontrolling interests and redeemable noncontrolling interests	1,572,399	1,414,793	1,238,732
Distributions paid to noncontrolling interests and redeemable noncontrolling interests	(225,114)	(217,633)	(196,466)
Acquisition of noncontrolling interest	(46,274)	(42,571)	(41,955)
Net proceeds related to stock-based award activities	22,611	32,863	36,141
Net cash provided by financing activities	3,468,698	3,037,451	2,645,594
Net change in cash and restricted cash	34,815	102,592	142,223
Cash and restricted cash, beginning of period	953,023	850,431	708,208
Cash and restricted cash, end of period	$ 987,838	$ 953,023	$ 850,431
Supplemental disclosures of cash flow information			
Cash paid for interest	$ 433,050	$ 300,118	$ 225,250
Cash paid for income taxes	$ —	$ —	$ —
Supplemental disclosures of noncash investing and financing activities			
Purchases of solar energy systems and property and equipment included in accounts payable and accrued expenses	$ 61,740	$ 61,327	$ 50,386
Right-of-use assets obtained in exchange for new finance lease liabilities	$ 87,726	$ 21,030	$ 11,055
Portion of solar energy systems financed with seller financing, included within non-recourse debt	$ —	$ —	$ 37,000

The accompanying notes are an integral part of these consolidated financial statements.

Note 1. Organization

Sunrun Inc. ("Sunrun" or the "Company") was formed in 2007 and is engaged in the design, development, installation, sale, ownership and maintenance of residential solar energy systems ("Projects") in the United States.

Sunrun acquires customers directly and through relationships with various solar and strategic partners ("Partners"). The Projects are constructed either by Sunrun or by Sunrun's Partners and are owned by the Company. Sunrun's customers enter into an agreement to utilize the solar energy system ("Customer Agreement") which typically has an initial term of 20 or 25 years. Sunrun monitors, maintains and insures the Projects. The Company also sells solar energy systems and products, such as panels and racking and solar leads generated to customers.

The Company has formed various subsidiaries ("Funds") to finance the development of Projects. These Funds, structured as limited liability companies, obtain financing from outside investors and purchase or lease Projects from Sunrun under master purchase or master lease agreements. The Company currently utilizes three legal structures in its investment Funds, which are referred to as: (i) pass-through financing obligations, (ii) partnership-flips and (iii) joint venture ("JV") inverted leases.

Note 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 reflect the accounts and operations of the Company and those of its subsidiaries, including Funds, in which the Company has a controlling financial interest. The typical condition for a controlling financial interest ownership is holding a majority of the voting interests of an entity. However, a controlling financial interest may also exist in entities, such as variable interest entities ("VIEs"), through arrangements that do not involve controlling voting interests. In accordance with the provisions of Financial Accounting Standards Board ("FASB") Accounting Standards Codification ("ASC") Topic 810, *Consolidation*, the Company consolidates any VIE of which it is the primary beneficiary. The primary beneficiary, as defined in FASB ASC Topic 810, *Consolidation*, is the party that has (1) the power to direct the activities of a VIE that most significantly impact the VIE's economic performance and (2) the obligation to absorb the losses of the VIE or the right to receive benefits from the VIE that could potentially be significant to the VIE. The Company evaluates its relationships with its VIEs on an ongoing basis to determine whether it continues to be the primary beneficiary. The consolidated financial statements reflect the assets and liabilities of VIEs that are consolidated. All intercompany transactions and balances have been eliminated in consolidation.

Reclassifications

Certain prior period amounts have been reclassified to conform to current period presentation.

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 estimates and assumptions, including, but not limited to, revenue recognition constraints that result in variable consideration, the discount rate used to adjust the promised amount of consideration for the effects of a significant financing component, the estimates that affect the collectability of accounts receivable, the valuation of inventories, the useful lives of solar energy systems, the useful lives of property and equipment, the discount rates used in the goodwill impairment calculation, the effective interest rate used to amortize pass-through financing obligations, the discount rate used for operating and financing leases, the valuation of stock-based compensation, the determination of valuation allowances associated with deferred tax assets, the fair value of debt instruments disclosed and the redemption value of redeemable noncontrolling interests. The Company bases its estimates on historical experience and on various other assumptions believed to be reasonable. Actual results may differ from such estimates.

Segment Information

The Company has one operating segment with one business activity, providing solar energy services and products to customers. The Company's chief operating decision maker ("CODM") is its Chief Executive Officer, who manages operations on a consolidated basis for purposes of allocating resources. When evaluating performance and allocating resources, the CODM reviews financial information presented on a consolidated basis.

Revenue from external customers (including, but not limited to homeowners) for each group of similar products and services is as follows (in thousands):

	Year Ended December 31,		
	2023	2022	2021
Customer agreements	$ 1,077,099	$ 872,298	$ 725,220
Incentives	109,607	110,749	101,344
Customer agreements and incentives	1,186,706	983,047	826,564
Solar energy systems	656,408	913,904	471,283
Products	416,699	424,471	312,107
Solar energy systems and product sales	1,073,107	1,338,375	783,390
Total revenue	$ 2,259,813	$ 2,321,422	$ 1,609,954

Revenue from Customer Agreements includes payments by customers for the use of the system as well as utility and other rebates assigned by the customer to the Company in the Customer Agreement. Revenue from incentives includes revenue from the sale of commercial investment tax credits ("Commercial ITCs") and solar renewable energy credits ("SRECs").

Cash and Restricted Cash

Cash consists of bank deposits held in checking and savings accounts. The Company considers all highly liquid investments purchased with an original maturity of three months or less to be cash equivalents. The Company has exposure to credit risk to the extent cash balances exceed amounts covered by federal deposit insurance. The Company believes that its credit risk is not significant.

Restricted cash represents amounts related to obligations under certain financing transactions and future replacement of solar energy system components.

The following table provides a reconciliation of cash and restricted cash reported within the consolidated balance sheets that sum to the total of the same such amounts shown in the consolidated statements of cash flows. Cash and restricted cash consists of the following (in thousands):

	December 31,		
	2023	2022	2021
Cash	$ 678,821	$ 740,508	$ 617,634
Restricted cash, current and long-term	309,017	212,515	232,797
Total	$ 987,838	$ 953,023	$ 850,431

Accounts Receivable

Accounts receivable consist of amounts due from customers as well as state and utility rebates due from government agencies and utility companies. Under Customer Agreements, the customers typically assign incentive rebates to the Company.

Accounts receivable are recorded at net realizable value. The Company maintains allowances for the applicable portion of receivables using the expected credit loss model. The Company estimates expected credit losses from doubtful accounts based upon the expected collectability of all accounts receivables, which takes into account the number of days past due, collection history, identification of specific customer exposure, current

economic trends, and management's expectation of future economic conditions. Once a receivable is deemed to be uncollectible, it is written off. In 2023, 2022 and 2021, the Company recorded provisions for credit losses of $21.7 million, $17.0 million and $11.7 million, respectively, and wrote-off uncollectible receivables of $15.8 million, $10.3 million and $5.6 million, respectively.

Accounts receivable, net consists of the following (in thousands):

	December 31,	
	2023	2022
Customer receivables	$ 186,537	$ 218,712
Other receivables	4,506	8,924
Allowance for credit losses	(19,042)	(13,381)
Total	$ 172,001	$ 214,255

Inventories

Inventories are stated at the lower of cost or net realizable value on a first-in, first-out basis. Inventories consist of raw materials such as photovoltaic panels, inverters and mounting hardware as well as miscellaneous electrical components that are sold as-is by the distribution operations and used in installations and work-in-process. Work-in-process primarily relates to solar energy systems that will be sold to customers, which are partially installed and have yet to meet the criteria for revenue recognition. For solar energy systems where the Company performs the installation, the Company commences transferring component parts from inventories to construction-in-progress, a component of solar energy systems, once a lease contract with a lease customer has been executed and the component parts have been assigned to a specific project. Additional costs incurred including labor and overhead are recorded within construction in progress.

The Company periodically reviews inventories for unusable and obsolete items based on assumptions about future demand and market conditions. Based on this evaluation, provisions are made to write inventories down to their market value.

Solar Energy Systems, net

The Company records solar energy systems subject to signed Customer Agreements and solar energy systems that are under installation as solar energy systems, net on its consolidated balance sheet. Solar energy systems, net is comprised of system equipment costs related to solar energy systems, less accumulated depreciation and amortization. Depreciation on solar energy systems is calculated on a straight-line basis over the estimated useful lives of the systems of 35 years. The Company periodically reviews its estimated useful life and recognizes changes in estimates by prospectively adjusting depreciation expense. Inverters and batteries are depreciated over their estimated useful life of 10 to 13 years.

Solar energy systems under construction will be depreciated as solar energy systems subject to signed Customer Agreements when the respective systems are completed and interconnected.

Property and Equipment, net

Property and equipment, net consists of leasehold improvements, furniture, computer hardware and software, machinery and equipment and automobiles. All property and equipment are stated at historical cost net of accumulated depreciation. Repairs and maintenance are expensed as incurred.

Property and equipment is depreciated on a straight-line basis over the following periods:

Leasehold improvements	Lesser of 6 years or lease term
Furniture	5 years
Computer hardware and software	3 years
Machinery and equipment	5 years or lease term
Automobiles	Lease term

Capitalization of Software Costs

For costs incurred in the development of internal use software, the Company capitalizes costs incurred 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 of 3 years. Costs of $21.3 million, $10.0 million and $6.2 million were capitalized in 2023, 2022 and 2021, respectively.

Impairment of Long-Lived Assets

The carrying values of the Company's long-lived assets, including solar energy systems, 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 are considered in deciding when to perform an impairment review would include significant negative industry or economic trends and significant changes or planned changes in the use of the assets. Recoverability of these assets is measured by comparison of the carrying value of each asset group to the future undiscounted cash flows the asset group is expected to generate over its remaining life. If the asset group 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 group. If the useful life is shorter than originally estimated, the Company amortizes the remaining carrying value over the new shorter useful life. The Company has recognized no material impairments of its long-lived assets in any of the periods presented.

Goodwill

Goodwill represents the excess of the purchase price over the fair value of assets acquired and liabilities assumed. Goodwill is reviewed for impairment at least annually or whenever events or changes in circumstances indicate that the carrying value may be impaired. The Company has determined that it operates as one reporting unit and the Company's goodwill is recorded at the enterprise level. The Company performs its annual impairment test of goodwill on October 1 of each fiscal year or whenever events or circumstances change or occur that would indicate that goodwill might be impaired. When assessing goodwill for impairment, the Company uses qualitative and if necessary, quantitative methods in accordance with FASB ASC Topic 350, *Goodwill*. The Company also considers its enterprise value and if necessary, discounted cash flow model, which involves assumptions and estimates, including the Company's future financial performance, weighted average cost of capital and interpretation of currently enacted tax laws.

Circumstances that could indicate impairment and require the Company to perform a quantitative impairment test include significant declines in the Company's financial results or enterprise value relative to its net book value or a sustained decline in the Company's stock price below its book value, coupled with declines in valuations for comparable public companies or acquisition premiums. The Company tests goodwill for impairment for its one reporting unit using an estimated fair value approach. The Company's stock price has continued to decline during 2023, consistent with other industry peers, experiencing a significant decline during the third quarter. A sustained decrease in the Company's stock price is one of the qualitative factors to be considered as part of an impairment test when evaluating whether events or changes in circumstances may indicate that it is more likely than not that a potential goodwill impairment exists.

Due to the continued sustained decline in the Company's market capitalization after consideration of a control premium below the book value of equity, the Company performed a quantitative assessment as of September 30, 2023 related to the recoverability of its goodwill for its one reporting unit. The Company estimated the fair value of its reporting unit primarily based on consideration of an income approach analysis. Under the income approach, future cash flows of the Company were estimated and present valued based on a discount rate reflecting a market participant risk-adjusted rate of return. As of September 30, 2023, the Company concluded that the fair value of the Company's one reporting unit did not exceed its carrying value with consideration of a control premium and recorded a non-cash goodwill impairment charge of $1.2 billion in its consolidated statements of operations. This impairment charge did not result in a change to previously recorded deferred taxes, as goodwill was not deductible for tax purposes, nor did it impact the Company's liquidity position, its debt covenants or cash flows.

The assumptions and estimates used in the assessment include, among others, estimated future net annual contracted cash flows under its existing long term customer agreements, as well as future growth estimates which rely on management judgements. The Company selected estimates used in the discounted cash flow projections using historical data as well as current and anticipated market conditions, and estimated growth rates with consideration of published industry trends. The Company also compared the total invested capital (including market capitalization) to the fair value of its reporting unit to assess the reasonableness of fair value after consideration of a control premium based on observable comparable company transactions. After the impairment charge, the fair value of the Company's one reporting unit approximated its estimated carrying value as of September 30, 2023. As of October 1, 2023, the Company conducted its annual goodwill impairment test. The test concluded that no additional impairment had occurred during the fourth quarter of 2023.

Deferred Revenue

When the Company receives consideration, or when such consideration is unconditionally due, from a customer prior to delivering goods or services to the customer under the terms of a Customer Agreement, the Company records deferred revenue. Such deferred revenue consists of amounts for which the criteria for revenue recognition have not yet been met and includes amounts that are collected or assigned from customers, including upfront deposits and prepayments, and rebates. Deferred revenue relating to financing components represents the cumulative excess of interest expense recorded on financing component elements over the related revenue recognized to date and will eventually net to zero by the end of the initial term. Amounts received related to the sales of SRECs which have not yet been delivered to the counterparty are recorded as deferred revenue.

The opening balance of deferred revenue was $873.6 million as of December 31, 2021. Deferred revenue consists of the following (in thousands):

	December 31,	
	2023	2022
Under Customer Agreements:		
Payments received, net	$ 873,137	$ 840,771
Financing component balance	72,289	65,326
	945,426	906,097
Under SREC contracts:		
Payments received, net	237,800	179,416
Financing component balance	12,835	10,460
	250,635	189,876
Total	$ 1,196,061	$ 1,095,973

During the years ended December 31, 2023, 2022 and 2021, the Company recognized revenue of $113.3 million, $99.0 million and $86.3 million, respectively, from amounts included in deferred revenue at the beginning of the respective periods. Revenue allocated to remaining performance obligations represents contracted revenue that has not yet been recognized and includes deferred revenue as well as amounts that will be invoiced and recognized as revenue in future periods. Contracted but not yet recognized revenue was approximately $25.1 billion as of December 31, 2023, of which the Company expects to recognize approximately 5% over the next 12 months. The annual recognition is not expected to vary significantly over the next 10 years as the vast majority of existing

Customer Agreements have at least 10 years remaining, given that the average age of the Company's fleet of residential solar energy systems under Customer Agreements is less than five years due to the Company being formed in 2007 and having experienced significant growth in the last few years. The annual recognition on these existing contracts will gradually decline over the midpoint of the Customer Agreements over the following 10 years as the typical 20- or 25-year initial term expires on individual Customer Agreements.

Deferred Grants

Deferred grants consist of U.S. Treasury grants and state tax credits. The Company applied for a renewable energy technologies income tax credit offered by one of the states in the form of a cash payment and deferred the tax credit as a grant on the consolidated balance sheets. The Company records the grants as deferred grants and recognizes the benefit on a straight-line basis over the estimated depreciable life of the associated assets as a reduction in Cost of customer agreements and incentives.

Warranty Accrual

The Company accrues warranty costs when revenue is recognized for solar energy systems sales, based on the estimated future costs of meeting its warranty obligations. Warranty costs primarily consist of replacement costs for supplies and labor costs for service personnel since warranties for equipment and materials are covered by the original manufacturer’s warranty (other than a small deductible in certain cases). As such, the warranty reserve is immaterial in all periods presented. The Company makes and revises these estimates based on the number of solar energy systems under warranty, the Company’s historical experience with warranty claims, assumptions on warranty claims to occur over a systems’ warranty period and the Company’s estimated replacement costs. A warranty is provided for solar systems sold and leased. However, for the solar energy systems under Customer Agreements, the Company does not accrue a warranty liability because those systems are owned by consolidated subsidiaries of the Company. Instead, any repair costs on those solar energy systems are expensed when they are incurred as a component of customer agreements and incentives costs of revenue.

Solar Energy Performance Guarantees

The Company guarantees to customers certain specified minimum solar energy production output for solar facilities over the initial term of the Customer Agreements. The Company monitors the solar energy systems to determine whether these specified minimum outputs are being achieved. Annually or every two years, depending on the terms of the Customer Agreement, the Company will refund a portion of electricity payments to a customer if the solar energy production output was less than the performance guarantee. The Company considers this a variable component that offsets the transaction price.

Derivative Financial Instruments

The Company recognizes all derivative instruments on the balance sheet at their fair value. Changes in the fair value of derivatives are recorded each period in current earnings or other comprehensive income if a derivative is designated as part of a hedge transaction. The ineffective portion of the hedge, if any, is immediately recognized in earnings and is included in other income (expenses), net in the consolidated statements of operations.

The Company uses derivative financial instruments, primarily interest rate swaps, to manage its exposure to interest rate risks on its syndicated term loans, which are recognized on the balance sheet at their fair values. On the date that the Company enters into a derivative contract, the Company formally documents all relationships between the hedging instruments and the hedged items, as well as its risk management objective and strategy for undertaking each hedge transaction. Derivative instruments designated in a hedge relationship to mitigate exposure to variability in expected future cash flows, or other types of forecasted transactions, are considered cash flow hedges. Cash flow hedges are accounted for by recording the fair value of the derivative instrument on the balance sheet as either a freestanding asset or liability. Changes in the fair value of a derivative that is designated and qualifies as an effective cash flow hedge are recorded in accumulated other comprehensive loss, net of tax, until earnings are affected by the variability of cash flows of the hedged item. Any derivative gains and losses that are not effective in hedging the variability of expected cash flows of the hedged item or that do not qualify for hedge accounting treatment are recognized directly into income. At the hedge’s inception and at least quarterly thereafter, a formal assessment is performed to determine whether changes in cash flows of the derivative instrument have been highly effective in offsetting changes in the cash flows of the hedged items and whether they are expected to

be highly effective in the future. The Company discontinues hedge accounting prospectively when (i) it determines that the derivative is no longer effective in offsetting changes in the cash flows of a hedged item; (ii) the derivative expires or is sold, terminated, or exercised; or (iii) management determines that designating the derivative as a hedging instrument is no longer appropriate. In all situations in which hedge accounting is discontinued and the derivative remains outstanding, the derivative instrument is carried at its fair market value on the balance sheet with the changes in fair value recognized in current period earnings. The remaining balance in accumulated other comprehensive income associated with the derivative that has been discontinued is not recognized in the income statement unless it is probable that the forecasted transaction will not occur. Such amounts are recognized in earnings when earnings are affected by the hedged transaction.

Fair Value of Financial Instruments

The Company defines fair value 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. The Company uses valuation approaches to measure fair value that maximize the use of observable inputs and minimize the use of unobservable inputs. The FASB establishes a three-tier fair value hierarchy for disclosure of fair value measurements as follows:

- Level 1—Inputs are unadjusted, quoted prices in active markets for identical assets or liabilities at the measurement date;
- Level 2—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 3—Inputs that are unobservable, significant to the measurement of the fair value of the assets or liabilities and are supported by little or no market data.

The Company's financial instruments include cash, receivables, accounts payable, accrued expenses, distributions payable to noncontrolling interests, derivatives, contingent consideration, and recourse and non-recourse debt.

Certain assets are measured at fair value on a non-recurring basis. These assets are not measured at fair value on an ongoing basis, but are subject to fair value adjustments only in certain circumstances. These assets can include goodwill that is written down to fair value when it is impaired, which uses level 3 inputs. Assets that are written down to fair value when impaired are not subsequently adjusted to fair value unless further impairment occurs.

Revenue Recognition

The Company recognizes revenue when control of goods or services is transferred to its customers, in an amount that reflects the consideration it expects to be entitled to in exchange for those goods or services.

Customer agreements and incentives

Customer agreements and incentives revenue is primarily comprised of revenue from Customer Agreements in which the Company provides continuous access to a functioning solar energy system and revenue from the sales of SRECs generated by the Company's solar energy systems to third parties.

The Company begins to recognize revenue on Customer Agreements when permission to operate ("PTO") is given by the local utility company or on the date daily operation commences if utility approval is not required. Revenue recognition does not necessarily follow the receipt of cash. For Customer Agreements that include a fixed fee per month which entitles the customer to any and all electricity generated by the system, and for which the Company's obligation is to provide continuous access to a functioning solar energy system, the Company recognizes revenue evenly over the time that it satisfies its performance obligations, which is over the initial term of the Customer Agreements. For Customer Agreements that charge a fixed price per kilowatt hour, and for which the Company's obligation is the provision of electricity from a solar energy system, revenue is recognized based on the actual amount of power generated at rates specified under the contracts. Customer Agreements typically have an

initial term of 20 or 25 years. After the initial contract term, Customer Agreements typically automatically renew annually or for five years.

SREC revenue arises from the sale of environmental credits generated by solar energy systems and is generally recognized upon delivery of the SRECs to the counterparty or upon reporting of the electricity generation. For pass-through financing obligation Funds, the value attributable to the monetization of Commercial ITCs are recognized in the period a solar energy system is granted PTO - see Note 12, *Pass-Through Financing Obligations*.

In determining the transaction price, the Company adjusts the promised amount of consideration for the effects of the time value of money when the timing of payments provides it with a significant benefit of financing the transfer of goods or services to the customer. In those circumstances, the contract contains a significant financing component. When adjusting the promised amount of consideration for a significant financing component, the Company uses the discount rate that would be reflected in a separate financing transaction between the entity and its customer at contract inception and recognizes the revenue amount on a straight-line basis over the term of the Customer Agreement, and interest expense using the effective interest rate method.

Consideration from customers is considered variable due to the performance guarantee under Customer Agreements and liquidating damage provisions under SREC contracts in the event minimum deliveries are not achieved. Performance guarantees provide a credit to the customer if the system's cumulative production, as measured on various PTO anniversary dates, is below the Company's guarantee of a specified minimum. Revenue is recognized to the extent it is probable that a significant reversal of such revenue will not occur.

The Company capitalizes incremental costs incurred to obtain a contract in Other Assets in the consolidated balance sheets. These amounts are amortized on a straight-line basis over the term of the Customer Agreements, and are included in Sales and marketing in the consolidated statements of operations.

Solar energy systems and product sales

For solar energy systems sold to customers, revenue is recognized when the solar energy system passes inspection by the authority having jurisdiction, which inspection generally occurs after installation but prior to PTO, at which time the Company has met the performance obligation in the contract. For solar energy system sales that include delivery obligations up until interconnection to the local power grid with permission to operate, the Company recognizes revenue at PTO. Certain solar energy systems sold to customers include fees for extended warranty and maintenance services. These fees are recognized over the life of the service agreement. The Company’s installation Projects are typically completed in less than twelve months.

Product sales consist of solar panels, racking systems, inverters, other solar energy products sold to resellers, roofing repair, and customer leads. Product sales revenue is recognized at the time when control is transferred, upon shipment, or as services are delivered. Customer lead revenue, included in product sales, is recognized at the time the lead is delivered.

Taxes assessed by government authorities that are directly imposed on revenue producing transactions are excluded from solar energy systems and product sales.

Cost of Revenue

Customer agreements and incentives

Cost of revenue for customer agreements and incentives is primarily comprised of (1) the depreciation of the cost of the solar energy systems, as reduced by amortization of deferred grants, (2) solar energy system operations, monitoring and maintenance costs including associated personnel costs, and (3) allocated corporate overhead costs.

Solar energy systems and product sales

Cost of revenue for solar energy systems and non-lead generation product sales consist of direct and indirect material and labor costs for solar energy systems installations and product sales. Also included are engineering and design costs, estimated warranty costs, freight costs, allocated corporate overhead costs, vehicle depreciation costs and personnel costs associated with supply chain, logistics, operations management, safety and quality control.

Cost of revenue for lead generations consists of costs related to direct-response advertising activities associated with generating customer leads.

Research and Development Expense

Research and development expenses include personnel costs, allocated overhead costs, and other costs related to the development of the Company's proprietary technology.

Stock-Based Compensation

The Company grants stock options and restricted stock units ("RSUs") for its equity incentive plan and employee stock purchase plan. Stock-based compensation to employees is measured based on the grant date fair value of the awards and recognized over the period during which the employee is required to perform services in exchange for the award (generally the vesting period of the award). When determining the grant date fair value of stock-based compensation, the Company utilizes the observable closing share price of its stock on the grant date. The Company considers whether any adjustments are needed to the share price to reflect fair value, including in instances where the observable market price does not reflect certain material non-public information known to the Company, but unavailable to marketplace participants at the time the market price is observed. No such adjustments were made during the years ended December 31, 2023, 2022, and 2021. The Company estimates the fair value of stock options and employee stock purchase plans awards granted using the Black-Scholes option-valuation model. Upon completion of the acquisition of Vivint Solar, all outstanding equity awards under Vivint Solar's equity incentive plans were automatically converted to Sunrun equity awards with the number of shares underlying such awards (and, in the case of stock options, the applicable exercise price) adjusted based on the exchange ratio of 0.55 shares of Sunrun common stock per share of Vivint Solar common stock and the fair value was also updated in accordance with FASB ASC Topic 718, *Stock Compensation*. Compensation cost is recognized over the vesting period of the applicable award using the straight-line method for those options expected to vest. For performance-based equity compensation awards, the Company generally recognizes compensation expense for each vesting tranche over the related performance period.

The Company also grants RSUs to non-employees that vest upon the satisfaction of both performance and service conditions. For RSUs granted to non-employees that vest upon the satisfaction of a performance condition, the Company starts recognizing expense on the RSUs when the performance condition is met.

Net (Loss) Income Per Share

Basic net (loss) income per share is computed by dividing net (loss) income attributable to common stockholders by the weighted-average number of common shares outstanding during the period. Diluted net (loss) income per share is computed by dividing net (loss) income attributable to common stockholders by the weighted-average number of common shares outstanding during the period adjusted to include the effect of potentially dilutive securities. Potentially dilutive securities are excluded from the computation of dilutive EPS in periods in which the effect would be antidilutive.

Noncontrolling Interests and Redeemable Noncontrolling Interests

Noncontrolling interests represent investors' interests in the net assets of the Funds that the Company has created to finance the cost of its solar energy systems subject to the Company's Customer Agreements. The Company has determined that the contractual provisions in the funding arrangements represent substantive profit sharing arrangements. The Company has further determined that the appropriate methodology for attributing income and loss to the noncontrolling interests and redeemable noncontrolling 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 noncontrolling interests and redeemable noncontrolling interests in the consolidated statements of operations reflect changes in the amounts the investors would hypothetically receive at each balance sheet date under the liquidation provisions of the contractual agreements of these arrangements, which are based on the investors' tax capital accounts, assuming the net assets of these funding structures were liquidated at recorded amounts. The Company's initial calculation of the investor's noncontrolling interest in the results of operations of these funding arrangements is determined as the difference in the noncontrolling interests' claim under the HLBV method at the start and end of each reporting period, after taking into account any capital transactions, such as contributions or distributions, between the Fund and the investors.

The Company classifies certain noncontrolling interests with redemption features that are not solely within the control of the Company outside of permanent equity on its consolidated balance sheets. Redeemable noncontrolling interests are reported using the greater of their carrying value as determined by the HLBV method or their estimated redemption value at each reporting date.

Income Taxes

The Company recognizes deferred tax assets and liabilities for the expected future tax consequences of events that have been included in the consolidated financial statements and tax returns. Under this method, deferred tax assets and liabilities are determined based on the difference between the financial statement and tax basis of assets and liabilities using enacted tax rates in effect for the year in which the differences are expected to reverse. Valuation allowances are provided against deferred tax assets to the extent that it is more likely than not that the deferred tax asset will not be realized. The Company is subject to the provisions of FASB ASC Topic 740, *Income Taxes*, which establishes consistent thresholds as it relates to accounting for income taxes. It defines the threshold for recognizing the benefits of tax return positions in the financial statements as "more likely than not" to be sustained by the taxing authority and requires measurement of a tax position meeting the more-likely-than-not criterion, based on the largest benefit that is more than 50% likely to be realized. Management has analyzed the Company's inventory of tax positions with respect to all applicable income tax issues for all open tax years (in each respective jurisdiction).

The Company sells solar energy systems to the Funds. As the Funds are consolidated by the Company, the gain on the sale of the solar energy systems is not recognized in the consolidated financial statements. However, this gain is recognized for tax reporting purposes. The Company 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.

The Company accounts for investment tax credits as a reduction of income tax expense in the year in which the credits arise (*i.e.* the flow-through method).

The Company files tax returns as prescribed by the tax laws of the jurisdictions in which it operates. In the normal course of business, the Company is subject to examination by federal, state and local jurisdictions, where applicable. The statute of limitations for the tax returns varies by jurisdiction.

Concentrations of Risk

Financial instruments which potentially subject the Company to concentrations of credit risk consist primarily of cash and accounts receivable, which includes rebates receivable. The associated risk of concentration for cash is mitigated by banking with institutions with high credit ratings. At certain times, amounts on deposit exceed Federal Deposit Insurance Corporation insurance limits. The Company does not require collateral or other security to support accounts receivable. To reduce credit risk, management performs periodic credit evaluations and ongoing evaluations of its customers' financial condition. Rebates receivable are due from various states and local governments as well as various utility companies. The Company considers the collectability risk of such amounts to be low. The Company is not dependent on any single customer. The Company's customers under Customer Agreements are primarily located in California, Arizona, New Jersey, New York, Maryland, Illinois and Massachusetts. The loss of a customer would not adversely impact the Company's operating results or financial position. The Company depends on a limited number of suppliers of solar panels and other system components. During the years ended December 31, 2023 and 2022, the solar materials purchases from the top five suppliers were approximately $561.6 million and $747.1 million, respectively.

Recently Issued and Adopted Accounting Standards

Accounting standards adopted January 1, 2021:

In January 2021, the FASB issued ASU No. 2021-01, *Reference Rate Reform (Topic 848): Scope*, which permits entities to elect certain optional expedients and exceptions when accounting for derivative contracts and certain hedging relationships affected by reference rate reform. This ASU is effective upon issuance and can

generally be applied through December 31, 2022. The Company adopted ASU 2019-12 effective January 1, 2021, and there was no impact to its consolidated financial statements.

In November 2019, the FASB issued ASU No. 2019-12, *Income Taxes (Topic 740)*, which simplifies the accounting for income taxes, primarily by eliminating certain exceptions to the guidance in FASB ASC Topic 740, *Income Taxes*. The Company adopted ASU 2019-12 effective January 1, 2021, and there was no impact to its consolidated financial statements.

In August 2020, the FASB issued ASU No. 2020-06, *Debt—Debt with Conversion and Other Options (Subtopic 470-20) and Derivatives and Hedging—Contracts in Entity's Own Equity (Subtopic 815-40)*, simplifies the accounting for convertible instruments and the application of the derivatives scope exception for contracts in an entity's own equity. This ASU is effective for fiscal periods beginning after December 15, 2021. The Company adopted ASU 2020-06 effective January 1, 2021, and applied this guidance to the convertible senior notes issued in January 2021, see Note 10, *Indebtedness*, which allowed the Company to account for the notes and their underlying conversion feature as a liability. There was no other impact to the Company's consolidated financial statements as a result of this adoption.

In March 2020, the FASB issued ASU No. 2020-04, *Reference Rate Reform (Topic 848)*, *Facilitation of the Effects of Reference Rate Reform on Financial Reporting*, which provides optional expedients and exceptions for applying GAAP to contracts, hedging relationships, and other transactions affected by reference rate reform if certain criteria are met. The amendments apply only to contracts, hedging relationships, and other transactions that reference LIBOR or other reference rates that are expected to be discontinued because of reference rate reform. This ASU is available for adoption as of the beginning of the interim period that includes March 12, 2020 through December 31, 2022, as contract modifications or hedging relationships entered into or evaluated after December 31, 2022 are excluded unless an entity has elected certain optional expedients for and that are retained through the end of the hedging relationship. In December 2022, the FASB issued ASU 2022-06, *Reference Rate Reform (Topic 848): Deferral of the Sunset Date of Topic 848*, which defers the sunset date from December 31, 2022 to December 31, 2024, after which entities will no longer be permitted to apply the relief in Topic 848. For the Company's cash flow hedges in which the designated hedged risk is LIBOR or another rate that is expected to be discontinued, the Company adopted upon issuance of ASU 2020-04 the portion of the guidance that allows it to assert that it remains probable that the hedged forecasted transaction will occur. The Company adopted the remainder of this guidance effective January 1, 2021, and there was no impact to its consolidated financial statements.

Accounting standards adopted January 1, 2022:

In October 2021, the FASB issued ASU No. 2021-08, *Business Combinations (Topic 805): Accounting for Contract Assets and Contract Liabilities from Contracts with Customers*, which requires contract assets and contract liabilities acquired in a business combination to be recognized and measured in accordance with FASB ASC Topic 606, *Revenue from Contracts with Customers*. This ASU is effective for interim and annual periods beginning after December 15, 2022 on a prospective basis, with early adoption permitted. Effective January 1, 2022, the Company early adopted ASU 2021-08 on a prospective basis. There was no impact to its consolidated financial statements.

In May 2021, the FASB issued ASU No. 2021-04, *Earnings Per Share (Topic 260), Debt— Modifications and Extinguishments (Subtopic 470-50), Compensation—Stock Compensation (Topic 718), and Derivatives and Hedging— Contracts in Entity's Own Equity (Subtopic 815-40)*, which requires issuers to account for modifications or exchanges of freestanding equity-classified written call options that remain equity classified after the modification or exchange based on the economic substance of the modification or exchange. The Company adopted ASU 2021-04 effective January 1, 2022, and there was no impact to its consolidated financial statements.

Accounting standards adopted January 1, 2023:

In October 2022, the FASB issued ASU No. 2022-04, *Liabilities — Supplier Finance Programs (Subtopic 405-50): Disclosure of Supplier Finance Program Obligations*, which requires entities to disclose the key terms of supplier finance programs they use in connection with the purchase of goods and services along with information about their obligations under these programs, including a rollforward of those obligations. This ASU is effective for fiscal periods beginning after December 15, 2022, with early adoption permitted. The Company adopted ASU 2022-04 effective January 1, 2023 and there was no impact to its financial statement disclosures.

Accounting standards to be adopted:

In November 2023, the FASB issued ASU 2023-07, *Segment Reporting (Topic 280): Improvements to Reportable Segment Disclosures*, which expands disclosures about a public entity's reportable segments and requires more enhanced information about a reportable segment's expenses, interim segment profit or loss, and how a public entity's chief operating decision maker uses reported segment profit or loss information in assessing segment performance and allocating resources. This ASU is effective for fiscal periods beginning after December 15, 2023, with early adoption permitted. The Company is currently evaluating this guidance and the impact it may have on its financial statement disclosures.

In December 2023, the FASB issued ASU 2023-09, *Income Taxes (Topic 740): Improvements to Income Tax Disclosures*, which expands disclosures in an entity's income tax rate reconciliation table and regarding cash taxes paid both in the U.S. and foreign jurisdictions. This ASU is effective for fiscal periods beginning after December 15, 2024, with early adoption permitted. The Company is currently evaluating this guidance and the impact it may have on its financial statement disclosures.

Note 3. Fair Value Measurement

At December 31, 2023 and 2022, the carrying value of receivables, accounts payable, accrued expenses and distributions payable to noncontrolling interests approximates fair value due to their short-term nature and falls under the Level 2 hierarchy. The carrying values and fair values of debt instruments are as follows (in thousands):

	December 31, 2023		December 31, 2022	
	Carrying Value	Fair Value	Carrying Value	Fair Value
Recourse debt	$ 932,369	$ 844,727	$ 898,040	$ 787,340
Senior debt	4,114,134	4,082,994	3,238,633	3,176,774
Subordinated debt	2,219,573	2,131,994	1,743,048	1,625,258
Securitization debt	3,405,852	3,191,542	2,519,428	2,169,247
Total	$ 10,671,928	$ 10,251,257	$ 8,399,149	$ 7,758,619

At December 31, 2023 and 2022, the fair value of certain recourse debt and certain senior, subordinated and securitization loans approximate their carrying values because their interest rates are variable rates that approximate rates currently available to the Company. At December 31, 2023 and 2022, the fair value of the Company's other debt instruments are based on rates currently offered for debt with similar maturities and terms. The Company's fair value of the debt instruments fell under the Level 2 hierarchy. These valuation approaches involve some level of management estimation and judgment, the degree of which is dependent on the price transparency for the instruments or market.

At December 31, 2023 and 2022, financial instruments measured at fair value on a recurring basis, based upon the fair value hierarchy are as follows (in thousands):

	December 31, 2023			
	Level 1	Level 2	Level 3	Total
Derivative assets:				
Interest rate swaps	$ —	$ 132,734	$ —	$ 132,734
Total	$ —	$ 132,734	$ —	$ 132,734
Derivative liabilities:				
Interest rate swaps	$ —	$ 60,401	$ —	$ 60,401
Total	$ —	$ 60,401	$ —	$ 60,401

	December 31, 2022			
	Level 1	Level 2	Level 3	Total
Derivative assets:				
Interest rate swaps	$ —	$ 177,827	$ —	$ 177,827
Total	$ —	$ 177,827	$ —	$ 177,827
Derivative liabilities:				
Interest rate swaps	$ —	$ 8,247	$ —	$ 8,247
Total	$ —	$ 8,247	$ —	$ 8,247

The above balances are recorded in other assets and other liabilities, respectively, in the consolidated balance sheets, except for $55.5 million and $55.0 million as of December 31, 2023 and 2022, respectively, which is recorded in prepaid expenses and other current assets.

The Company determines the fair value of its interest rate swaps using a discounted cash flow model that incorporates an assessment of the risk of non-performance by the interest rate swap counterparty and an evaluation of the Company's credit risk in valuing derivative instruments. The valuation model uses various inputs including contractual terms, interest rate curves, credit spreads and measures of volatility.

Note 4. Inventories

Inventories consist of the following (in thousands):

	December 31,	
	2023	2022
Raw materials	$ 413,410	$ 671,880
Work-in-process	46,336	112,024
Total	$ 459,746	$ 783,904

Note 5. Solar Energy Systems, net

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

	December 31,	
	2023	2022
Solar energy system equipment costs	$ 12,558,996	$ 10,529,852
Inverters and batteries	1,845,580	1,384,776
Total solar energy systems	14,404,576	11,914,628
Less: accumulated depreciation and amortization	(2,165,171)	(1,682,296)
Add: construction-in-progress	789,466	756,029
Total solar energy systems, net	$ 13,028,871	$ 10,988,361

All solar energy systems, including construction-in-progress, have been leased to or are subject to signed Customer Agreements with customers. The Company recorded depreciation expense related to solar energy systems of $500.6 million, $426.7 million and $368.0 million for the years ended December 31, 2023, 2022 and 2021, respectively. The depreciation expense was reduced by the amortization of deferred grants of $8.2 million, $8.3 million and $8.3 million for the years ended December 31, 2023, 2022 and 2021, respectively.

Note 6. Property and Equipment, net

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

	December 31,	
	2023	2022
Machinery and equipment	$ 17,216	$ 11,742
Leasehold improvements, furniture, and computer hardware	47,810	44,547
Vehicles	157,486	94,821
Computer software	74,636	53,314
Total property and equipment	297,148	204,424
Less: Accumulated depreciation and amortization	(148,009)	(136,985)
Total property and equipment, net	$ 149,139	$ 67,439

Depreciation and amortization expense was $31.9 million, $27.2 million and $23.0 million for the years ended December 31, 2023, 2022 and 2021, respectively.

Note 7. Goodwill, net

The goodwill was acquired as part of the acquisition of Mainstream Energy Corporation, which included AEE Solar and its racking business SnapNrack; Clean Energy Experts, LLC; Omni Energy, LLC; and Vivint Solar.

The Company has determined that it has one reporting unit and performs its annual impairment test of goodwill on October 1 of each fiscal year or whenever events or circumstances change or occur that would indicate that goodwill might be impaired. During the third quarter of 2023, due to the continued material sustained decline in the Company's market capitalization after consideration of a control premium below the book value of equity, the Company performed an interim quantitative assessment as of September 30, 2023 related to the recoverability of its goodwill for its one reporting unit. As of September 30, 2023, the Company concluded that the fair value of the Company's one reporting unit did not exceed its carrying value with consideration of a control premium and recorded a non-cash goodwill impairment charge of $1.2 billion in its consolidated statements of operations. There were no such impairments during the years ended December 31, 2022 and 2021. As of October 1, 2023, the Company conducted its annual goodwill impairment test. The test concluded that no additional impairment had occurred during the fourth quarter of 2023. To corroborate this conclusion, the Company compared the carrying value of its one reporting unit to its enterprise market capitalization after consideration of a reasonable control premium and concluded that there was no goodwill impairment during the fourth quarter of 2023.

The change in the carrying value of goodwill is as follows (in millions):

Balance—January 1, 2023, 2022 and 2021	$ 4,280
Impairment—September 30, 2023	(1,158)
Balance—December 31, 2023	$ 3,122

Note 8. Other Assets

Other assets consist of the following (in thousands):

	December 31,	
	2023	2022
Costs to obtain contracts - customer agreements	$ 1,565,098	$ 1,096,346
Costs to obtain contracts - incentives	2,481	2,481
Accumulated amortization of costs to obtain contracts	(168,564)	(112,968)
Unbilled receivables	468,379	324,385
Allowance for credit loss on unbilled receivables	(4,774)	(3,322)
Operating lease right-of-use assets	91,635	104,759
Equity investment	132,563	186,197
Other assets	180,834	237,167
Total	$ 2,267,652	$ 1,835,045

The Company recorded amortization of costs to obtain contracts of $56.3 million and $38.7 million for the years ended December 31, 2023 and 2022, respectively, in sales and marketing expense in the consolidated statements of operations.

The majority of unbilled receivables arise from fixed price escalators included in the Company's long-term Customer Agreements. The escalator is included in calculating the total estimated transaction value for an individual Customer Agreement. The total estimated transaction value is then recognized over the term of the Customer Agreement. The amount of unbilled receivables increases while billings for an individual Customer Agreement are less than the revenue recognized for that Customer Agreement. Conversely, the amount of unbilled receivables decreases once the billings become higher than the amount of revenue recognized in the period. At the end of the initial term of a Customer Agreement, the cumulative amounts recognized as revenue and billed to date are the same, therefore the unbilled receivable balance for an individual Customer Agreement will be zero. The Company applies an estimated loss-rate in order to determine the current expected credit loss for unbilled receivables. The estimated loss-rate is determined by analyzing historical credit losses, residential first and second mortgage foreclosures and consumers' utility default rates, as well as current economic conditions. The Company reviews individual customer collection status of electricity billings to determine whether the unbilled receivables for an individual customer should be written off, including the possibility of a service transfer to a potential new homeowner.

Note 9. Accrued Expenses and Other Liabilities

Accrued expenses and other liabilities consist of the following (in thousands):

	December 31,	
	2023	2022
Accrued employee compensation	$ 93,414	$ 101,621
Operating lease obligations	29,572	31,307
Accrued interest	92,881	63,595
Other accrued expenses	283,358	209,943
Total	$ 499,225	$ 406,466

Note 10. Indebtedness

As of December 31, 2023 and 2022, respectively, debt consisted of the following (in thousands, except percentages):

	December 31, 2023	December 31, 2022	Unused Borrowing Capacity [1]	Weighted Average Interest Rate at December 31, 2023 [2]	Weighted Average Interest Rate at December 31, 2022 [2]	Contractual Interest Rate [3]	Contractual Maturity Date
Recourse debt							
Line of credit [4]	$ 539,502	$ 505,158	$ —	8.89%	6.01%	SOFR +3.25%	January 2025[4]
0% Convertible Senior Notes [5]	$ 397,642	$ 400,000	$ —	—%	—%	—%	February 2026
Total recourse debt	937,144	905,158	—				
Unamortized debt discount	(4,775)	(7,118)	—				
Total recourses debt, net	932,369	898,040	—				
Non-recourse debt [6]							
Senior revolving and delayed draw loans [7]	1,886,300	1,560,002	26,800	7.59%	6.49%	SOFR +2.15% - 3.10%	April 2025 - March 2027[7]
Senior non-revolving loans [10]	2,226,343	1,680,444	—	7.07%	6.00%	4.66% - 6.93%; SOFR +1.85% - 2.65%	April 2024 - July 2053
Subordinated revolving and delayed draw loans [7][11]	146,000	333,800	50,000	12.01%	9.58%	SOFR +3.76% - 9.10%	April 2024 - March 2027
Subordinated loans [8][9]	2,110,693	1,442,336	—	9.18%	8.76%	7.00% - 10.50%; SOFR +6.00% - 6.90%	June 2026 - January 2042
Securitized loans [12]	3,450,794	2,531,465	—	4.61%	3.87%	2.27% - 6.60%	July 2045 - January 2059
Total non-recourse debt	9,820,130	7,548,047	76,800				
Unamortized debt (discount) premium, net	(80,571)	(46,938)	—				
Total non-recourse debt, net	9,739,559	7,501,109	76,800				
Total debt, net	$10,671,928	$8,399,149	$ 76,800				

(1) Represents the additional amount the Company could borrow, if any, based on the state of its existing assets as of December 31, 2023.

(2) Reflects weighted average contractual, unhedged rates. See Note 11, *Derivatives,* for hedge rates.

(3) Ranges shown reflect fixed interest rate and rates using SOFR, as applicable.

(4) The former working capital facility was terminated in January 2022 and was replaced by this syndicated working capital facility with banks has a total commitment up to $600.0 million and is secured by substantially all of the unencumbered assets of the Company, as well as ownership interests in certain subsidiaries of the Company. Borrowings under the Facility may be designated as Base Rate Loans or Term SOFR Loans, subject to certain terms and conditions under the Credit Agreement. Base Rate Loans accrue interest at a rate per year equal to 2.25% plus the highest of (a) the federal funds rate plus 0.50%, (b) the interest rate determined from time to time by the Administrative Agent as its prime rate and notified to the Company, (c) the Adjusted Term SOFR Rate (defined below) for a one-month interest period in effect on such day (or if such day is not a business day, the immediately preceding business day) plus 1.00% and (d) 0.00%. Term SOFR Loans accrue interest at a rate per annum equal to (a) 3.25% plus (b) the greater of (i) 0.00% and (ii) the sum of (x) the forward-looking term rate for a period comparable to the applicable available tenor based on SOFR that is published by CME Group Benchmark Administration Ltd or a successor for the applicable interest period and (y) (1) if the applicable interest period is one month, 0.11448%, (2) if the applicable interest period is three months, 0.26161% or (c) if the applicable interest period is six months, 0.42826% (the rate pursuant to clause (b), the “Adjusted Term SOFR Rate”). This facility is subject to various restrictive covenants, such as the completion and presentation of audited consolidated financial statements, maintaining a minimum modified interest coverage ratio, a minimum modified current ratio, a maximum modified leverage ratio, and a minimum unencumbered cash balance, in each case, tested quarterly. The Company was in compliance with all debt covenants as of December 31, 2023. In February 2024, the Company extended its working capital

facility with a new maturity date of November 1, 2025 and a total commitment up to $447.5 million, and repaid approximately $152.3 million in outstanding borrowings. The maturity date can be further extended to March 2027, if the Company meets certain liquidity tests as of September 30, 2024.

(5) These convertible senior notes ("Notes") will not bear regular interest, and the principal amount of the notes will not accrete. The Notes may bear special interest under specified circumstances relating to the Company's failure to comply with its reporting obligations under the Indenture or if the Notes are not freely tradeable as required by the Indenture. The Notes will mature on February 1, 2026, unless earlier repurchased by the Company, redeemed by the Company or converted pursuant to their terms. The initial conversion rate of the Notes is 8.4807 shares of the Company's common stock, par value $0.0001 per share, per $1,000 principal amount of Notes, which is equivalent to an initial conversion price of approximately $117.91 per share. The conversion rate will be subject to adjustment upon the occurrence of certain specified events but will not be adjusted for any accrued and unpaid special interest. In addition, upon the occurrence of a make-whole fundamental change or an issuance of a notice of redemption, the Company will, in certain circumstances, increase the conversion rate by a number of additional shares for a holder that elects to convert its Notes in connection with such make-whole fundamental change or notice of redemption. The debt discount recorded on the Notes is being amortized to interest expense at an effective interest rate of 0.57%. As of December 31, 2023, $6.6 million of the debt discount was amortized to interest expense inception to date. In connection with the offering of the Notes, the Company entered into privately negotiated capped call transactions ("Capped Calls") with certain of the initial purchasers and/or their respective affiliates at a cost of approximately $28.0 million. The Capped Calls are classified as equity and were recorded to additional paid-in-capital within stockholders' equity as of March 31, 2021. The Capped Calls each have an initial strike price of approximately $117.91 per share, subject to certain adjustments, which corresponds to the initial conversion price of the Notes. The Capped Calls have initial cap prices of $157.22 per share. The Capped Calls cover, subject to anti-dilution adjustments, approximately 3.4 million shares of Common Stock. The Capped Calls are expected generally to reduce the potential dilution to the Common Stock upon any conversion of Notes and/or offset any cash payments the Company is required to make in excess of the principal amount of the Notes, as the case may be, in the event the market price per share of common stock, as measured under the Capped Calls, is greater than the strike price of the Capped Call, with such offset subject to a cap. If, however, the market price per share of the common stock, as measured under the Capped Calls, exceeds the cap price of the Capped Calls, there would be dilution and/or there would not be an offset of such potential cash payments, in each case, to the extent that the then-market price per share of the common stock exceeds the cap price. The final components of the Capped Calls are scheduled to expire on January 29, 2026. None of the conversion criteria has been met as of December 31, 2023.

(6) Certain loans under this category are part of project equity transactions.

(7) Pursuant to the terms of the aggregation facilities within this category the Company may draw up to an aggregate principal amount of $2.2 billion in revolver borrowings depending on the available borrowing base at the time. In February 2024, the Company increased the size of the facilities within this category to $2.35 billion and extended the maturity date to April 2028.

(8) A loan under this category with an outstanding balance of $140.0 million as of December 31, 2023 contains a put option that can be exercised beginning in 2036 that would require the Company to pay off the entire loan on November 30, 2037.

(9) Loans under this category with a floating rate had a total outstanding balance of $462.1 million as of December 31, 2023.

(10) As of December 31, 2023, a loan under this category has a balance of $160.6 million with a maturity date of April 2024 and is reflected in Non-recourse debt, current portion within the Consolidated Balance Sheet. Although there is no assurance that the Company will be able to do so, the Company plans to extend or otherwise refinance the facility prior to maturity.

(11) As of December 31, 2023, a loan under this category has a balance of $100.0 million with a maturity date of April 2024 and is reflected in Non-recourse debt, current portion within the Consolidated Balance Sheet. Although there is no assurance that the Company will be able to do so, the Company plans to extend or otherwise refinance the facility prior to maturity.

(12) As of December 31, 2023, a loan under this category had a balance of $54.2 million with a final rated maturity date of July 2045. Although there is no assurance that the Company will be able to do so, the Company plans to extend or otherwise refinance the facility prior to anticipated repayment date.

Senior and Subordinated Debt Facilities

Each of the Company's senior and subordinated debt facilities contain customary covenants including the requirement to maintain certain financial measurements and provide lender reporting. Each of the senior and subordinated debt facilities also contain certain provisions in the event of default that entitle lenders to take certain actions including acceleration of amounts due under the facilities and acquisition of membership interests and assets that are pledged to the lenders under the terms of the senior and subordinated debt facilities. The facilities are non-recourse to the Company and are secured by net cash flows from Customer Agreements or inventories less certain operating, maintenance and other expenses that are available to the borrower after distributions to tax equity investors, where applicable. Under the terms of these facilities, the Company's subsidiaries pay interest and principal from the net cash flows available to the subsidiaries. The Company was in compliance with all debt covenants as of December 31, 2023.

Non-Recourse Financings

In connection with each of the Company's non-recourse debt (including securitized loans), assets (consisting of membership interests in project companies that own photovoltaic systems and related customer agreements) were contributed by the Company to special purpose subsidiaries of the Company (each a “Non-Recourse Borrower”). Each of such financings contains customary covenants including the requirement to provide reporting to the indenture trustee or collateral agent and, if applicable, ratings agencies. Each of the financings also contains certain provisions which entitle the indenture trustee or collateral agent to take certain actions upon the occurrence of an event of default, including acceleration of amounts due under the facilities and the foreclosure on the assets of the Non-Recourse Borrower that are pledged to the lenders under the terms thereof. The facilities are non-recourse to the Company and are secured by first priority security interests by each Non-Recourse Borrower in favor of the indenture trustee or collateral agent in all of the Non-Recourse Borrower’s assets including the cash flows from Customer Agreements which are available to each Non-Recourse Borrower after giving effect to certain operating, maintenance and other expenses and, where applicable, distributions to tax equity investors. As a result of such security interests, the assets of each Non-Recourse Borrower are not available to the creditors of the Company unless and until distributions from such entities are made to the Company as permitted under the applicable facility documentation. Under the terms of these financings, each Non-Recourse Borrower pays interest and principal from such net cash flows. The Company was in compliance with all debt covenants as of December 31, 2023.

Maturities of Indebtedness

The aggregate future principal payments for debt as of December 31, 2023 are as follows (in thousands):

2024	$	557,202
2025		2,513,711
2026		1,261,096
2027		876,062
2028		226,540
Thereafter		5,322,663
Subtotal		10,757,274
Debt discount, net		(85,346)
Total	$	10,671,928

Note 11. Derivatives

Interest Rate Swaps

The Company uses interest rate swaps to hedge variable interest payments due on certain of its term loans and aggregation facility. These swaps allow the Company to incur fixed interest rates on these loans and receive payments based on variable interest rates with the swap counterparty based on SOFR (daily, one month, three month) on the notional amounts over the life of the swaps. In the second quarter of 2023, the Company entered into bilateral agreements with its swap counterparties to transition the remaining portion of its swaps to SOFR. The Company made various elections under FASB ASC Topic 848, *Reference Rate Reform*, related to changes in critical terms of the hedging relationships due to reference rate reform to not result in a de-designation of these hedging relationships. As of September 30, 2023, all of the Company's interest rate swap agreements were indexed to SOFR.

The interest rate swaps have been designated as cash flow hedges. The credit risk adjustment associated with these swaps is the risk of non-performance by the counterparties to the contracts. In the quarter ended December 31, 2023, the hedge relationships on the Company's interest rate swaps have been assessed as highly effective as the quarterly assessment performed determined changes in cash flows of the derivative instruments have been highly effective in offsetting the changes in the cash flows of the hedged items, are expected to be highly effective in the future and the critical terms of the interest rate swaps match the critical terms of the underlying forecasted hedged transactions. Accordingly, changes in the fair value of these derivatives are recorded as a component of accumulated other comprehensive income, net of income taxes. Changes in the fair value of these derivatives are subsequently reclassified into earnings, and are included in interest expense, net in the Company's statements of operations, in the period that the hedged forecasted transactions affect earnings. To the extent that the hedge relationships are not effective, changes in the fair value of these derivatives are recorded in other expense (income), net in the Company's statements of operations on a prospective basis.

The Company's master netting and other similar arrangements allow net settlements under certain conditions. When those conditions are met, the Company presents derivatives at net fair value. As of December 31, 2023, the information related to these offsetting arrangements were as follows (in thousands):

Instrument Description	Gross Amounts of Recognized Assets / Liabilities	Gross Amounts Offset in the Consolidated Balance Sheet	Net Amounts of Assets / Liabilities Included in the Consolidated Balance Sheet	Notional Amount [1]
Assets:				
Derivatives designated as hedging instruments	$ 97,321	$ (5)	$ 97,316	$1,416,686
Derivatives not designated as hedging instruments	35,413	(5,246)	30,167	1,695,495
Total derivative assets	132,734	(5,251)	127,483	3,112,181
Liabilities:				
Derivatives designated as hedging instruments	(5,963)	5	(5,958)	324,042
Derivatives not designated as hedging instruments	(54,438)	5,246	(49,192)	809,785
Total derivative liabilities	(60,401)	5,251	(55,150)	1,133,827
Total derivative assets & liabilities	$ 72,333	$ —	$ 72,333	$4,246,008

(1) Comprised of 79 interest rate swaps which effectively fix the SOFR portion of interest rates on outstanding balances of certain loans under the senior and securitized sections of the debt footnote table (see Note 10, *Indebtedness*) at 0.31% to 4.53% per annum. These swaps mature from April 30, 2024 to January 31, 2043.

As of December 31, 2022, the information related to these offsetting arrangements were as follows (in thousands):

Instrument Description	Gross Amounts of Recognized Assets / Liabilities	Gross Amounts Offset in the Consolidated Balance Sheet	Net Amounts of Assets / Liabilities Included in the Consolidated Balance Sheet	Notional Amount
Assets:				
Derivatives designated as hedging instruments	$ 133,168	$ —	$ 133,168	$2,122,222
Derivatives not designated as hedging instruments	44,659	(4,523)	40,136	1,095,820
Total derivative assets	177,827	(4,523)	173,304	3,218,042
Liabilities:				
Derivatives designated as hedging instruments	(3,724)	—	(3,724)	—
Derivatives not designated as hedging instruments	(4,523)	4,523	—	—
Total derivative liabilities	(8,247)	4,523	(3,724)	—
Total derivative assets & liabilities	$ 169,580	$ —	$ 169,580	$3,218,042

The gains on derivatives designated as cash flow hedges recognized into OCI, before tax effect, consisted of the following (in thousands):

	Year Ended December 31,		
	2023	2022	2021
Derivatives designated as cash flow hedges:			
Interest rate swaps	$ (23,787)	$ (177,451)	$ (25,117)

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

	Year Ended December 31,					
	2023		2022		2021	
	Interest expense, net	Other expense, net	Interest expense, net	Other income, net	Interest expense, net	Other income, net
Derivatives designated as cash flow hedges:						
Interest rate swaps						
(Gains) losses reclassified from AOCI into income	$ (36,755)	$ —	$ (2,407)	$ —	$ 21,517	$ —
Derivatives not designated as cash flow hedges:						
Interest rate swaps						
Gains recognized into income	—	661	—	(189,710)	—	(21,387)
Total (gains) losses	$ (36,755)	$ 661	$ (2,407)	$ (189,710)	$ 21,517	$ (21,387)

All amounts in Accumulated other comprehensive (loss) income ("AOCI") in the consolidated statements of redeemable noncontrolling interests and equity relate to derivatives, refer to the consolidated statements of comprehensive loss. The net gains (losses) on derivatives includes the tax effect of $0.5 million, $34.9 million and $12.9 million for the twelve months ended December 31, 2023, 2022 and 2021, respectively.

During the next 12 months, the Company expects to reclassify $28.1 million of net gains on derivative instruments from accumulated other comprehensive income to earnings. There were forty-four undesignated derivative instruments recorded by the Company as of December 31, 2023.

Note 12. Pass-Through Financing Obligations

The Company's pass-through financing obligations ("financing obligations") arise when the Company leases solar energy systems to Fund investors who are considered commercial customers under a master lease agreement, and these investors in turn are assigned the Customer Agreements with customers. The Company receives all of the value attributable to the accelerated tax depreciation and some or all of the value attributable to the other incentives. Given the assignment of operating cash flows, these arrangements are accounted for as financing obligations. The Company also sells the rights and related value attributable to the Commercial ITC to these investors.

Under these financing obligation arrangements, wholly owned subsidiaries of the Company finance the cost of solar energy systems with investors for an initial term of 22 years, and one fund for 7 years. The solar energy systems are subject to Customer Agreements with an initial term of typically 20 or 25 years that automatically renew annually or for five years. These solar energy systems are reported under the line item solar energy systems, net in the consolidated balance sheets. As of December 31, 2023 and 2022, the cost of the solar energy systems placed in service under the financing obligation arrangements was $692.3 million and $699.5 million, respectively. The accumulated depreciation related to these assets as of December 31, 2023 and 2022 was $191.5 million and $167.9 million, respectively. During the year ended December 31, 2021, the Company retired one of its financing obligations and terminated the associated lease for $18.1 million, which resulted in a debt extinguishment expense of $6.3 million.

The investors make a series of large up-front payments and, in certain cases, subsequent smaller quarterly payments (lease payments) to the subsidiaries of the Company. The Company accounts for the payments received from the investors under the financing obligation arrangements as borrowings by recording the proceeds received as financing obligations on its consolidated balance sheets, and cash provided by financing activities in its consolidated statements of cash flows. These financing obligations are reduced over a period of approximately 22 years, or over 7 years in the case of one fund, by customer payments under the Customer Agreements, and proceeds from the contracted resale of SRECs as they are received by the investor. In addition, funds paid for the Commercial ITC value upfront are initially recorded as a refund liability and recognized as revenue as the associated solar energy system reaches PTO. The Commercial ITC value is reflected in cash provided by

operations on the consolidated statements of cash flows. The Company accounts for the Customer Agreements, as well as the resale of SRECs consistent with the Company's revenue recognition accounting policies as described in Note 2, *Summary of Significant Accounting Policies.*

Interest is calculated on the financing obligations using the effective interest rate method. The effective interest rate, which is adjusted on a prospective basis, is the interest rate that equates the present value of the estimated cash amounts to be received by the investor over the lease term with the present value of the cash amounts paid by the investor to the Company, adjusted for amounts received by the investor. The financing obligations are nonrecourse once the associated assets have been placed in service and all the contractual arrangements have been assigned to the investor.

Under the majority of the financing obligations, the investor has a right to extend its right to receive cash flows from the customers beyond the initial term in certain circumstances. Depending on the arrangement, the Company has the option to settle the outstanding financing obligation on the ninth or eleventh anniversary of the Fund inception at a price equal to the higher of (a) the fair value of future remaining cash flows or (b) the amount that would result in the investor earning their targeted return. In several of these financing obligations, the investor has an option to require repayment of the entire outstanding balance on the tenth anniversary of the Fund inception at a price equal to the fair value of the future remaining cash flows.

Under the majority of the financing obligations, the Company is responsible for services such as warranty support, accounting, lease servicing and performance reporting to customers. As part of the warranty and performance guarantee with the customers in applicable funds, the Company guarantees certain specified minimum annual solar energy production output for the solar energy systems leased to the customers, which the Company accounts for as disclosed in Note 2, *Summary of Significant Accounting Policies.*

Note 13. VIE Arrangements

The Company consolidated various VIEs at December 31, 2023 and 2022. The carrying amounts and classification of the VIEs' assets and liabilities included in the consolidated balance sheets are as follows (in thousands):

	December 31,	
	2023	2022
Assets		
Current assets		
Cash	$ 254,522	$ 457,005
Restricted cash	48,169	44,514
Accounts receivable, net	76,249	66,847
Inventories	150,065	193,836
Prepaid expenses and other current assets	161,414	12,698
Total current assets	690,419	774,900
Solar energy systems, net	10,469,093	8,968,835
Other assets	379,028	287,771
Total assets	$ 11,538,540	$ 10,031,506
Liabilities		
Current liabilities		
Accounts payable	$ 12,187	$ 36,315
Distributions payable to noncontrolling interests and redeemable noncontrolling interests	35,181	32,051
Accrued expenses and other liabilities	185,766	32,512
Deferred revenue, current portion	54,103	49,037
Non-recourse debt, current portion	270,460	39,894
Total current liabilities	557,697	189,809
Deferred revenue, net of current portion	654,310	572,420
Non-recourse debt, net of current portion	1,189,161	1,449,513
Other liabilities	16,816	15,260
Total liabilities	$ 2,417,984	$ 2,227,002

The Company holds certain variable interests in nonconsolidated VIEs established as a result of six pass-through Fund arrangements as further explained in Note 12, *Pass-Through Financing Obligations*. The Company does not have material exposure to losses as a result of its involvement with the VIEs in excess of the amount of the pass-through financing obligation recorded in the Company's consolidated financial statements. The Company is not considered the primary beneficiary of these VIEs.

Note 14. Redeemable Noncontrolling Interests

During certain specified periods of time (the "Early Exit Periods"), noncontrolling interests in certain funding arrangements have the right to put all of their membership interests to the Company (the "Put Provisions"). During a specific period of time (the "Call Periods"), the Company has the right to call all membership units of the related redeemable noncontrolling interests.

Note 15. Stockholders' Equity

Convertible Preferred Stock

The Company did not have any convertible preferred stock issued and outstanding as of December 31, 2023 and 2022.

The Company did not declare or pay any dividends in 2023, 2022 or 2021.

Common Stock

The Company has reserved sufficient shares of common stock for issuance upon the exercise of stock options and the exercise of warrants. Common stockholders are entitled to dividends if and when declared by the board of directors, subject to the prior rights of the preferred stockholders. As of December 31, 2023, no common stock dividends had been declared by the board of directors.

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

	December 31,	
	2023	2022
Stock plans		
Shares available for grant		
Sunrun-VSI 2014 Equity Incentive Plan	5,694	9,534
2015 Equity Incentive Plan	17,830	20,534
2015 Employee Stock Purchase Plan	8,537	10,071
Options outstanding	4,243	5,217
Restricted stock units outstanding	8,449	4,542
Total	44,753	49,898

Note 16. Stock-Based Compensation

2013 Equity Incentive Plan

In July 2013, the Board of Directors approved the 2013 Equity Incentive Plan (“2013 Plan”). In March 2015, the Board of Directors authorized an additional 3,000,000 shares reserved for issuance under the 2013 Plan. An aggregate of 4,500,000 shares of common stock are reserved for issuance under the 2013 Plan plus (i) any shares that were reserved but not issued under the plan that was previously in place, and (ii) any shares subject to stock options or similar awards granted under the plan that was previously in place that expire or otherwise terminate without having been exercised in full and shares issued that are forfeited to or repurchased by the Company, with the maximum number of shares to be added to the 2013 Plan pursuant to clauses (i) and (ii) equal to 8,044,829 shares. Stock options granted to employees generally have a maximum term of ten-years and vest over a four-year period from the date of grant; 25% vest at the end of one year, and 75% vest monthly over the remaining three years. The options may include provisions permitting exercise of the option prior to full vesting. Any unvested shares shall be subject to repurchase by the Company at the original exercise price of the option in the event of a termination of an optionee’s employment prior to vesting. All the remaining shares that were available for future grants under the 2013 Plan were transferred to the 2015 Equity Incentive Plan (“2015 Plan”) at the inception of the 2015 Plan.

Sunrun-VSI 2014 Equity Incentive Plan

Upon completion of the Merger, the Company may grant equity awards through the Sunrun-VSI 2014 Equity Incentive Plan (“Sunrun-VSI 2014 Plan”), which was previously called the Vivint Solar 2014 Equity Incentive Plan. Under the Sunrun-VSI 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, 2023, a total of 5.7 million shares of common stock were available for grant under the Sunrun-VSI 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 Sunrun-VSI 2014 Plan. The number of shares available to grant under the Sunrun-VSI 2014 Plan is subject to an annual increase on the first day of each year.

Long-term Incentive Plan

In July 2013, Vivint Solar's board of directors approved 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. The Merger Agreement provided that the LTIP awards outstanding immediately prior to the Closing Date were canceled and terminated and that subsequent to the Closing Date, each holder of a canceled LTIP award would be granted an RSU award to be settled in shares of Sunrun common stock, with the number of shares underlying such award calculated as if the LTIP performance hurdles were achieved, with the Closing Date as the determination date. As a result, approximately 1.5 million shares of the Company common stock were awarded as RSUs to LTIP participants with a grant date equal to the Closing Date. These RSUs vest in three equal installments, subject to the grantee's continued provision of services to the Company. One-third vested 30 days after the Closing Date, one-third vested nine months after the Closing Date, and one-third vested 18 months after the Closing Date. As of December 31, 2023, there are no remaining shares available for grant under the LTIP.

2015 Equity Incentive Plan

In July 2015, the Sunrun Board approved the 2015 Plan. An aggregate of 11,400,000 shares of common stock are reserved for issuance under the 2015 Plan plus (i) any shares that were reserved but not issued under the 2013 Plan at the inception of the 2015 Plan, and (ii) any shares subject to stock options or similar awards granted under the 2008 Plan, 2013 Plan and 2014 Plan that expire or otherwise terminate without having been exercised in full and shares issued that are forfeited to or repurchased by the Company, with the maximum number of shares to be added to the 2015 Plan pursuant to clauses (i) and (ii) equal to 15,439,334 shares. The 2015 Plan provides for annual automatic increases on January 1 to the shares reserved for issuance. The automatic increase of the number of shares available for issuance under the 2015 Plan is equal to the least of 10 million shares, 4% of the outstanding shares of common stock as of the last day of the Company's immediately preceding fiscal year or such other amount as the Board of Directors may determine. In 2023 and 2022, there were no additional shares reserved for issuance under the 2015 Plan pursuant to the automatic provision. Stock options granted to employees generally have a maximum term of ten-years and vest over a four-year period from the date of grant; 25% vest at the end of one year, and 75% vest monthly over the remaining three years. The options may include provisions permitting exercise of the option prior to full vesting. Any unvested shares shall be subject to repurchase by the Company at the original exercise price of the option in the event of a termination of an optionee's employment prior to vesting. RSUs granted to employees generally vest over a four-year period from the date of grant; 25% vest at the end of one year, and 75% vest quarterly over the remaining three years.

Stock Options

The following table summarizes the activity for all stock options under all of the Company's equity incentive plans for the years ended December 31, 2023 and 2022 (shares and aggregate intrinsic value in thousands):

	Number of Options	Weighted Average Exercise Price	Weighted Average Remaining Contractual Life	Aggregate Intrinsic Value
Outstanding at December 31, 2021	6,257	$ 13.60	6.19	$ 140,326
Granted	942	28.10		
Exercised	(1,401)	8.04		
Canceled	(581)	28.17		
Outstanding at December 31, 2022	5,217	16.08	5.68	58,784
Granted	—	—		
Exercised	(775)	6.58		
Canceled	(199)	29.58		
Outstanding at December 31, 2023	4,243	$ 17.19	4.85	$ 31,762
Options vested and exercisable at December 31, 2023	3,596	$ 14.53	4.29	$ 31,395
Options vested and expected to vest at December 31, 2023	4,243	$ 17.19	4.85	$ 31,762

The weighted-average grant-date fair value of stock options granted during the year ended December 31, 2023, 2022 and 2021 were $0.00, $17.21 and $27.72 per share, respectively. The total intrinsic value of the options exercised during the year ended December 31, 2023, 2022 and 2021 was $10.3 million, $30.8 million and $106.1 million, respectively. The aggregate intrinsic value is the difference of the current fair value of the stock and the exercise price for in-the-money stock options. The total fair value of options vested during the year ended December 31, 2023, 2022 and 2021 was $11.8 million, $16.7 million and $36.4 million, respectively.

The Company estimates the fair value of stock-based awards on their grant date using the Black-Scholes option-pricing model. The Company estimates the fair value using a single-option approach and amortizes the fair value on a straight-line basis for options expected to vest. All options are amortized over the requisite service periods of the awards, which are generally the vesting periods.

The Company estimated the fair value of stock options with the following assumptions:

	Year Ended December 31,		
	2023	2022	2021
Risk-free interest rate	N/A	1.60% - 3.80%	0.90% - 1.30%
Volatility	N/A	65.60% - 69.40%	63.00% - 67.80%
Expected term (in years)	N/A	6.10	6.00 - 6.10
Expected dividend yield	N/A	— %	— %

The expected term assumptions were determined based on the average vesting terms and contractual lives of the options. The risk-free interest rate is based on the rate for a U.S. Treasury zero-coupon issue with a term that approximates the expected life of the option grant. No stock options were granted in the year ended December 31, 2023. For stock options granted in the year ended December 31, 2022, the expected volatility was calculated based on the Company's average historical volatilities and for the stock options granted in the year ended December 31, 2021, the Company considered the volatility data of a group of publicly traded peer companies in its industry. The Company accounts for forfeitures as they occur and, as such, reverses compensation cost previously recognized in the period the award is forfeited, for an award that is forfeited before completion of the requisite service period.

Restricted Stock Units

The following table summarizes the activity for all RSUs under all of the Company's equity incentive plans for the years ended December 31, 2023 and 2022 (shares in thousands):

	Shares	Weighted Average Grant Date Fair Value
Unvested balance at December 31, 2021	4,485	$ 42.73
Granted	4,500	27.66
Issued	(2,968)	40.31
Canceled / forfeited	(1,475)	35.85
Unvested balance at December 31, 2022	4,542	31.60
Granted	7,782	19.04
Issued	(2,835)	27.11
Canceled / forfeited	(1,040)	26.59
Unvested balance at December 31, 2023	8,449	$ 22.16

Warrants for Strategic Partners

The Company has issued warrants for up to 846,943 shares of its common stock to certain strategic partners (calculated using the respective quarter of grant's closing stock price). The exercise price of each warrant is $0.01 per share, and 63,742, 346,269 and 69,309 warrants were exercised during the years ended December 31, 2023, 2022 and 2021, respectively. During the years ended December 31, 2023, 2022 and 2021, the Company

recognized stock-based compensation expense of $4.3 million, $4.3 million and $10.7 million, respectively, under time-based warrants.

Employee Stock Purchase Plan

Under the Company's 2015 Employee Stock Purchase Plan (“ESPP”) (as amended in May 2017), eligible employees are offered shares bi-annually through a 24-month offering period which encompasses four six-month purchase periods. Each purchase period begins on the first trading day on or after May 15 and November 15 of each year. Employees may purchase a limited number of shares of the Company’s common stock via regular payroll deductions at a discount of 15% of the lower of the fair market value of the Company’s common stock on the first trading date of each offering period or on the exercise date. Employees may deduct up to 15% of payroll, with a cap of $25,000 of fair market value of shares in any calendar year and 10,000 shares per employee per purchase period. Under the ESPP, 1,000,000 shares of the Company’s common stock have been reserved for issuance to eligible employees. The ESPP provides for an automatic increase of the number of shares available for issuance under the ESPP on the first day of each fiscal year beginning on January 1, 2016, equal to the least of 5 million shares, 2% of the outstanding shares of the Company’s common stock on the last day of the immediately preceding fiscal year, or such other amount as may be determined by the Board of Directors. In 2023 and 2022, the Board of Directors did not authorize any additional shares reserved for issuance under the ESPP.

Stock-Based Compensation Expense

The Company recognized stock-based compensation expense, including ESPP expenses, in the consolidated statements of operations as follows (in thousands):

	Year Ended December 31,		
	2023	2022	2021
Cost of customer agreements and incentives	$ 8,772	$ 9,181	$ 11,469
Cost of solar energy systems and product sales	5,267	9,274	5,775
Sales and marketing	59,026	56,857	104,087
Research and development	1,739	2,667	3,806
General and administration	36,977	32,654	85,863
Total	$ 111,781	$ 110,633	$ 211,000

During the years ended December 31, 2023 and 2022, stock-based compensation expense capitalized to the Company’s consolidated balance sheet was $11.3 million and $12.4 million, respectively. As of December 31, 2023 and 2022, total unrecognized compensation cost related to outstanding stock options and RSUs was $146.5 million and $142.3 million, respectively, which are expected to be recognized over a weighted-average period of 2.8 years. Total unrecognized compensation cost includes the assumed unvested Vivint Solar awards to be recognized as stock-based compensation expense over the remaining requisite service period. Per FASB ASC Topic 805, *Business Combinations*, the replacement of stock options or other share-based payment awards in conjunction with a business combination represents a modification of share-based payment awards that must be accounted for in accordance with FASB ASC Topic 718, *Stock Compensation*. As a result of the Company’s issuance of replacement awards, a portion of the fair-value-based measure of the replacement awards is included in the purchase consideration. To determine the portion of the replacement awards that is part of the purchase consideration, the Company measured the fair value of both the replacement awards and the historical awards as of the Acquisition Date. The fair value of the replacement awards, whether vested or unvested, was included in the purchase consideration to the extent that pre-acquisition services were rendered. In the year ended December 31, 2023, the Company recognized compensation cost of $1.6 million for modifications due to the reduction in services of two grantees.

401(k) Plans

The Sunrun 401(k) Plan and the Vivint Solar 401(k) Plan are deferred salary arrangements under Section 401(k) of the Internal Revenue Code. Under both the Sunrun and Vivint Solar 401(k) Plans, participating U.S. employees may defer a portion of their pre-tax earnings, up to the IRS annual contribution limit ($19,500 for calendar year 2023). Under the Sunrun 401(k) Plan, the Company matches 100% of the first 1% and 50% of the next 5% of each employee's contributions. Under the Vivint Solar 401(k) Plan, the Company matches 33% of each employee's contributions up to a maximum of 6% of the employee's eligible earnings. The Company recognized expense of $22.7 million, $21.5 million and $14.7 million in the years ended December 31, 2023, 2022 and 2021, respectively.

Note 17. Income Taxes

The following table presents the loss (income) before income taxes for the periods presented (in thousands):

	For the Year Ended December 31,		
	2023	2022	2021
Loss (income) attributable to common stockholders	$ 1,617,188	$ (175,668)	$ 70,152
Loss attributable to noncontrolling interest and redeemable noncontrolling interests	1,078,344	1,023,022	901,107
Loss before income taxes	$ 2,695,532	$ 847,354	$ 971,259

The income tax (benefit) provision consists of the following (in thousands):

	For the Year Ended December 31,		
	2023	2022	2021
Current			
Federal	$ —	$ —	$ —
State	—	—	—
Foreign	—	—	—
Total current (benefit) expense	—	—	—
Deferred			
Federal	(23,583)	1,460	13,938
State	10,892	831	(4,667)
Foreign	—	—	—
Total deferred (benefit) provision	(12,691)	2,291	9,271
Total	$ (12,691)	$ 2,291	$ 9,271

The following table represents a reconciliation of the statutory federal rate and the Company's effective tax rate for the periods presented:

	For the Year Ended December 31,		
	2023	2022	2021
Tax provision (benefit) at federal statutory rate	(21.00)%	(21.00)%	(21.00)%
State income taxes, net of federal benefit	(1.11)	3.42	(2.30)
Effect of noncontrolling and redeemable noncontrolling interests	8.40	25.35	19.48
Stock-based compensation	0.46	1.03	0.29
Tax credits	(0.63)	(1.42)	(0.82)
Effect of valuation allowance	4.06	(7.47)	4.67
Goodwill impairment	9.02	—	—
Other	0.33	0.36	0.63
Total	(0.47)%	0.27 %	0.95 %

Deferred income taxes reflect the net tax effects of temporary differences between the carrying amounts of assets and liabilities for financial reporting purposes and the amounts used for income tax purposes. The following table represents the components of the Company's deferred tax assets and liabilities for the periods presented (in thousands):

	December 31,	
	2023	2022
Deferred tax assets		
Accruals and prepaids	$ 47,922	$ 39,942
Deferred revenue	81,692	70,491
Net operating loss carryforwards	788,507	625,147
Stock-based compensation	12,309	11,327
Investment tax and other credits	122,317	108,107
Interest expense	125,332	16,386
UNICAP costs	110,656	149,873
Total deferred tax assets	1,288,735	1,021,273
Less: Valuation allowance	(174,328)	(61,695)
Gross deferred tax assets	1,114,407	959,578
Deferred tax liabilities		
Interest rate derivatives	16,945	20,613
Capitalized costs to obtain a contract	375,226	266,697
Fixed asset depreciation and amortization	580,569	442,656
Deferred tax on investment in partnerships	264,537	362,659
Gross deferred tax liabilities	1,237,277	1,092,625
Net deferred tax liabilities	$ (122,870)	$ (133,047)

The Company accounts for investment tax credits as a reduction of income tax expense in the year in which the credits arise (i.e. the flow-through method). As of December 31, 2023, the Company has an investment tax credit carryforward of approximately $102.0 million which begins to expire in the year 2033, if not utilized, $0.8 million of California enterprise zone credits which begin to expire in the year 2024, and $1.1 million of other state tax credits which begin to expire in the year 2024. As of December 31, 2022, the Company has an investment tax credit carryforward of approximately $87.5 million and California enterprise zone credits of approximately $1.0 million.

Generally, utilization of the net operating loss carryforwards and credits may be subject to a substantial annual limitation due to the ownership change limitations provided by the Internal Revenue Code (IRC) of 1986, as amended and similar state provisions. The Company performed an analysis to determine whether an ownership change under IRC section 382 had occurred and determined that no ownership changes were identified as of December 31, 2023.

As of December 31, 2023, the Company had approximately $7.1 million of federal and $7.1 million of state capital loss carryforwards. The Company believes its capital loss carryforwards are not likely to be realized.

Valuation allowances are provided against deferred tax assets to the extent that it is more likely than not that the deferred tax asset will not be realized. The Company's management considers all available positive and negative evidence including its history of operating income or losses, future reversals of existing taxable temporary difference, taxable income in carryback years and tax-planning strategies. The Company has concluded that it is more likely than not that the benefit from certain federal and state tax credits and net operating loss carryforwards will not be realized. In recognition of this risk, the Company has provided a valuation allowance of $174.3 million on certain deferred tax assets, including those relating to federal and state tax credits and state net operating loss carryforwards, which is an increase of $112.6 million in 2023.

The Company sells solar energy systems to investment Funds. As the investment Funds are consolidated by the Company, the gain on the sale of the assets has been eliminated in the consolidated financial statements. However, this gain is recognized for tax reporting purposes. The Company 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.

Uncertain Tax Positions

The Company files tax returns as prescribed by the tax laws of the jurisdictions in which it operates. In the normal course of business, the Company is subject to examination by federal, state and local jurisdictions, where applicable. The statute of limitations for the tax returns varies by jurisdiction.

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 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. The Company has analyzed its inventory of tax positions with respect to all applicable income tax issues for all open tax years (in each respective jurisdiction).

The Company's policy is to include interest and penalties related to unrecognized tax benefits, if any, within the provision for taxes in the consolidated statements of operations.

The IRS is auditing one of the Company's tax equity investors, relating to an investment fund covered by the Company's 2018 insurance policy in an audit involving a review of the fair market value determination of solar energy systems. The Company is unable to determine if this audit will result in an adverse final determination at this time.

The Company is subject to taxation and files income tax returns in the U.S., its territories, and various state and local jurisdictions. Due to the Company's net losses, substantially all of its federal, state and local income tax returns since inception are still subject to audit.

The following table summarizes the tax years that remain open and subject to examination by the tax authorities in the most significant jurisdictions in which the Company operates:

	Tax Years
U.S. Federal	2020 - 2023
State	2019 - 2023

Net Operating Loss Carryforwards

As a result of the Company's net operating loss carryforwards as of December 31, 2023, the Company does not expect to pay income tax, including in connection with its income tax provision for the year ended December 31, 2023. As of December 31, 2023, the Company had net operating loss carryforwards for federal and state income tax purposes of approximately $720.7 million and $3.3 billion, respectively, which will begin to expire in 2028 for federal purposes and in 2024 for state purposes. In addition, federal and certain state net operating loss carryforwards generated in tax years beginning after December 31, 2017 total $2.0 billion and $357.1 million, respectively, and have indefinite carryover periods and do not expire.

Note 18. Commitments and Contingencies

Letters of Credit

As of December 31, 2023 and 2022, the Company had $37.0 million and $44.4 million, respectively, of unused letters of credit outstanding, which each carry fees of 0.50% - 3.25% per annum and 0.50% - 3.25% per annum, respectively.

Guarantees

Certain tax equity funds and debt facilities require the Company to maintain an aggregate amount of $35.0 million of unencumbered cash and cash equivalents at the end of each month.

Operating and Finance Leases

The Company leases real estate under non-cancellable operating leases and equipment under finance leases.

The components of lease expense were as follows (in thousands):

	For the Year Ended December 31,		
	2023	2022	2021
Finance lease cost:			
Amortization of right-of-use assets	$ 18,827	$ 15,873	$ 13,358
Interest on lease liabilities	3,291	1,127	958
Operating lease cost	34,937	31,966	26,906
Short-term lease cost	2,025	2,602	4,819
Variable lease cost	11,516	9,246	7,261
Sublease income	(4,667)	(3,780)	(1,095)
Total lease cost	$ 65,929	$ 57,034	$ 52,207

Other information related to leases was as follows (in thousands):

	For the Year Ended December 31,		
	2023	2022	2021
Cash paid for amounts included in the measurement of lease liabilities			
Operating cash flows from operating leases	$ 39,157	$ 34,233	$ 28,230
Operating cash flows from finance leases	2,952	896	952
Financing cash flows from finance leases	23,279	14,146	12,352
Right-of-use assets obtained in exchange for lease obligations:			
Operating leases	21,417	38,543	41,068
Finance leases	87,726	21,030	11,055
Weighted average remaining lease term (years):			
Operating leases	4.92	5.26	6.15
Finance leases	4.07	2.86	2.47
Weighted average discount rate:			
Operating leases	4.4 %	3.8 %	3.8 %
Finance leases	5.6 %	3.7 %	3.1 %

Future minimum lease commitments under non-cancellable leases as of December 31, 2023 were as follows (in thousands):

	Operating Leases	Sublease Income	Net Operating Leases	Finance leases
2024	$ 34,171	$ 2,976	$ 31,195	$ 26,389
2025	29,687	1,459	28,228	24,700
2026	24,842	975	23,867	23,559
2027	15,322	838	14,484	19,218
2028	7,968	—	7,968	7,525
Thereafter	19,808	—	19,808	—
Total future lease payments	131,798	6,248	125,550	101,391
Less: Amount representing interest	(13,469)	—	(13,469)	(10,585)
Present value of future payments	118,329	6,248	112,081	90,806
Less: Amount for tenant incentives	—	—	—	—
Revised Present value of future payments	118,329	6,248	112,081	90,806
Less: Current portion	(29,572)	(2,976)	(26,596)	(22,053)
Long term portion	$ 88,757	$ 3,272	$ 85,485	$ 68,753

Purchase Commitment

The Company entered into purchase commitments, which have the ability to be canceled without significant penalties, with multiple suppliers to purchase $366.4 million of photovoltaic modules, inverters and batteries by the end of the first quarter of 2025.

Warranty Accrual

The Company accrues warranty costs when revenue is recognized for solar energy systems sales, based on the estimated future costs of meeting its warranty obligations. Warranty costs primarily consist of replacement costs for supplies and labor costs for service personnel since warranties for equipment and materials are covered by the original manufacturer's warranty (other than a small deductible in certain cases). As such, the warranty reserve is immaterial in all periods presented. The Company makes and revises these estimates based on the number of solar energy systems under warranty, the Company's historical experience with warranty claims, assumptions on warranty claims to occur over a systems' warranty period and the Company's estimated replacement costs. A warranty is provided for solar energy systems sold. However, for the solar energy systems under Customer Agreements, the Company does not accrue a warranty liability because those systems are owned by consolidated subsidiaries of the Company. Instead, any repair costs on those solar energy systems are expensed when they are incurred as a component of customer agreements and incentives costs of revenue.

Commercial ITC Indemnification

The Company is contractually committed to compensate its investors for any losses that they may suffer in certain limited circumstances resulting from reductions in Commercial ITCs, including any reduction in depreciable basis. Generally, such obligations would arise as a result of reductions to the value of the underlying solar energy systems as assessed by the Internal Revenue Service (the "IRS"). The Company set the purchase prices and claimed values based on fair market values determined with the assistance of an independent third-party appraisal with respect to the systems that generate Commercial ITCs (and the associated depreciable basis) that are passed-through to, and claimed by, the Fund investors. In April 2018, the Company purchased an insurance policy providing for certain payments by the insurers in the event there is a final determination (including a judicial determination) that reduced the Commercial ITCs and depreciation claimed in respect of solar energy systems sold or transferred to most Funds through April 2018, or later, in the case of Funds added to the policy after such date. In general, the policy indemnifies the Company and related parties for additional taxes (including penalties and interest) owed in respect of lost Commercial ITCs, depreciation, gross-up costs and expenses incurred in defending such claim, subject to negotiated exclusions from, and limitations to, coverage. The Company purchased similar additional insurance policies in January 2021, October 2022 and May 2023.

At each balance sheet date, the Company assesses and recognizes, when applicable, the potential exposure from this obligation based on all the information available at that time, including any audits undertaken by the IRS. The IRS is auditing one of the Company's investors in an audit involving a review of the fair market value determination of the Company's solar energy systems in the investment fund, which is covered by the Company's 2018 insurance policy. If this audit results in an adverse final determination, the Company may be subject to an indemnity obligation to its investor, which may result in certain limited out-of-pocket costs and potential increased insurance premiums in the future.

Litigation

The Company is subject to certain legal proceedings, claims, investigations and administrative proceedings in the ordinary course of its business. The Company records a provision for a liability when it is both probable that the liability has been incurred and the amount of the liability can be reasonably estimated. These provisions, if any, are reviewed at least quarterly and adjusted to reflect the impacts of negotiations, settlements, rulings, advice of legal counsel and other information and events pertaining to a particular case. Depending on the nature and timing of any such proceedings that may arise, an unfavorable resolution of a matter could materially affect the Company's future consolidated results of operations, cash flows or financial position in a particular period.

In the normal course of business, the Company has from time to time been named as a party to various legal claims, actions, or complaints. While the outcome of these matters cannot currently 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.

Note 19. Net (Loss) Income Per Share

Basic net (loss) income per share is computed by dividing net (loss) income attributable to common stockholders by the weighted-average number of common shares outstanding during the period. Diluted net (loss) income per share is computed by dividing net (loss) income attributable to common stockholders by the weighted-average number of common shares outstanding during the period adjusted to include the effect of potentially dilutive securities. Potentially dilutive securities are excluded from the computation of dilutive EPS in periods in which the effect would be antidilutive.

The computation of the Company's basic and diluted net (loss) income per share is as follows (in thousands, except per share amounts):

	Years Ended December 31,		
	2023	2022	2021
Numerator:			
Net (loss) income attributable to common stockholders	$ (1,604,497)	$ 173,377	$ (79,423)
Debt discount amortization	—	2,258	—
Net (loss) income available to common stockholders	$ (1,604,497)	$ 175,635	$ (79,423)
Denominator:			
Weighted average shares used to compute net (loss) income per share attributable to common stockholders, basic	216,642	211,347	205,132
Weighted average effect of potentially dilutive shares to purchase common stock	—	7,810	—
Weighted average shares used to compute net (loss) income per share attributable to common stockholders, diluted	216,642	219,157	205,132
Net (loss) income per share attributable to common stockholders			
Basic	$ (7.41)	$ 0.82	$ (0.39)
Diluted	$ (7.41)	$ 0.80	$ (0.39)

The following shares were excluded from the computation of diluted net (loss) income per share as the impact of including those shares would be anti-dilutive (in thousands):

	Year Ended December 31,		
	2023	2022	2021
Outstanding stock options	1,674	1,661	799
Unvested restricted stock units	7,398	2,863	1,448
Convertible Senior Notes (if converted)	2,544	—	3,128
Total	11,616	4,524	5,375

Note 20. Related Party Transactions

Advances Receivable—Related Party

Net amounts due from direct-sales professionals were $10.1 million and $18.1 million as of December 31, 2023 and 2022, respectively. The Company provided a reserve of $2.4 million and $1.9 million as of December 31, 2023 and 2022, respectively, related to advances to direct-sales professionals who have terminated their employment agreement with the Company.

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

None.

Item 9A. Controls and Procedures.

Evaluation of Disclosure Controls and Procedures

We carried out an evaluation, under the supervision and with the participation of our management, including our Chief Executive Officer and our Chief Financial Officer, of the effectiveness of our "disclosure controls and procedures" as of the end of the period covered by this Annual Report on Form 10-K, pursuant to Rules 13a-15(e) and 15d-15(e) under the Exchange Act.

In connection with that evaluation, our Chief Executive Officer and our Chief Financial Officer concluded that our disclosure controls and procedures were effective and designed to provide reasonable assurance that the information required to be disclosed is recorded, processed, summarized and reported within the time periods specified in the Securities and Exchange Commission rules and forms as of December 31, 2023. The term "disclosure controls and procedures," as defined in Rules 13a-15(e) and 15d-15(e) under the Securities Exchange Act of 1934, as amended (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, or persons performing similar functions, as appropriate to allow timely decisions regarding required disclosure. Management recognizes that any controls and procedures, no matter how well designed and operated, can provide only reasonable assurance of achieving their objectives and management necessarily applies its judgment in evaluating the cost-benefit relationship of possible controls and procedures.

Changes in Internal Control over Financial Reporting

There was no change in our internal control over financial reporting identified in connection with the evaluation required by Rules 13a-15(d) and 15d-15(d) of the Exchange Act that occurred during the period covered by this Annual Report on Form 10-K that has materially affected, or is reasonably likely to materially affect, our internal control over financial reporting.

Management's Report on Internal Control over Financial Reporting

Management is responsible for establishing and maintaining adequate internal control over financial reporting as defined in Rules 13a-15(f) and 15d-15(f) of the Exchange Act. Our management used the Committee of Sponsoring Organizations of the Treadway Commission Internal Control - Integrated Framework (2013), or the COSO framework, to evaluate the effectiveness of internal control over financial reporting. Management believes that the COSO framework is a suitable framework for its evaluation of financial reporting because it is free from bias, permits reasonably consistent qualitative and quantitative measurements of our internal control over financial reporting, is sufficiently complete so that those relevant factors that would alter a conclusion about the effectiveness of our internal control over financial reporting are not omitted and is relevant to an evaluation of internal control over financial reporting.

Management has assessed the effectiveness of our internal control over financial reporting as of December 31, 2023 and has concluded that such internal control over financial reporting is effective.

The effectiveness of our internal control over financial reporting as of December 31, 2023 has been audited by Ernst & Young LLP, an independent registered public accounting firm, as stated in its report which is included in Item 8 of this Annual Report on Form 10-K.

Item 9B. Other Information.

Senior Secured Credit Facility

On February 16, 2024, a wholly owned subsidiary of ours entered into an amendment (the "Amendment") to a syndicated, senior secured credit facility originally entered into with various lenders on April 20, 2021 (the "Initial Credit Facility") which has previously been amended five times (as amended, the "Credit Facility"). Prior to the Amendment, the Credit Facility had commitments of $1.8 billion and matured on April 20, 2025. Prior to and after the Amendment, the Credit Facility is non-recourse to us and is secured by net cash flows from power purchase agreements and leases available to the subsidiary borrower after distributions to tax equity investors and payment of certain operating, maintenance and other expenses.

The Amendment amends certain terms of the Credit Facility, including:

- extending the maturity date to February 16, 2028;
- in the case of each lender (other than certain commercial paper conduit lenders ("CP Lenders")), increasing the interest rate (i) for the period from the date of the Amendment to February 16, 2027 from the SOFR index + 215 basis points to such index + 265 basis points and (ii) for the period from and after February 16, 2027, from the SOFR index + 315 basis points to such index + 365 basis points;
- in the case of each CP Lender, revising the interest rate (i) for the period from the date of the Amendment to February 16, 2027 from the SOFR index + a margin of 215 basis points to the applicable commercial rate for such CP Lender + 235 basis points and (ii) for the period from and after February 16, 2027 from the applicable SOFR index + a margin of 315 basis points to the applicable commercial paper rate for such CP Lender + 335 basis points; and
- increasing total loan commitments available by $550.0 million, bringing the total commitments to $2.35 billion.

The foregoing description of the Amendment is qualified in its entirety by reference to the full text of the Amendment, a copy of which is filed as an exhibit to this Annual Report on Form 10-K for the year ended December 31, 2023.

Line of Credit

On February 20, 2024, we entered into Amendment No. 3 ("Amendment No. 3") to that certain Credit Agreement, dated as of January 24, 2022 (as amended by Amendment No. 3, the "Credit Agreement"), by and among Sunrun and the other parties thereto, to, among other things, (a) reduce the commitments to $447.5 million and provide for an accordion of $30.0 million, (b) permit our issuance of our new convertible notes in aggregate amount not to exceed $600.0 million, (c) extend the stated maturity date to November 1, 2025, (d) allow for the further extension of the maturity date to March 1, 2027 if, as of September 30, 2024, we maintain funds on deposit in a collateral account equal to an amount sufficient to repay at the scheduled maturity all of our 0% Senior Convertible Notes due 2026 (the "2026 Convertible Notes") that are outstanding on September 30, 2024 and we are otherwise in compliance with our quarter-end liquidity covenant (such extension, the "Maturity Date Extension"), (e) revise the margin that accrues on SOFR loans and base rate loans from 3.25% and 2.25%, respectively to 3.25%, 3.50% and 3.75% for SOFR loans and 2.25%, 2.50% and 2.75% for base rate loans, in each case depending on utilization of the facility, (f) maintain funds on deposit in a collateral account equal to the greater of (i) the excess (if any) of (1) the aggregate principal amount of all convertible debt outstanding as of the relevant date of determination over (2) $700 million and (ii) if the Maturity Date Extension has occurred, the amount necessary to repay in full at scheduled maturity the principal amount of the 2026 Convertible Notes that remain outstanding as of such date of determination, (g) provide for payment of principal based on a percentage of a measure of cash generated by certain activities as specified in the agreement after the second quarter of 2024, and (h) limit utilization of the facility by a multiple of cashflows produced from certain operating assets and available for distribution to us.

In connection with entering into Amendment No. 3, we repaid approximately $152.3 million in outstanding borrowings under the Credit Agreement.

The foregoing description of Amendment No. 3 is qualified in its entirety by reference to the full text of Amendment No. 3, a copy of which is filed as an exhibit to this Annual Report on Form 10-K for the year ended December 31, 2023.

Rule 10b5-1 Disclosure

During our last fiscal quarter, some of our directors and officers (as defined in Rule 16a-1(f) under the Exchange Act) adopted or terminated the contracts, instructions or written plans for the purchase or sale of our securities as noted below.

On November 3, 2023, Gerald Risk, a member of our Board, terminated a trading plan for the sale of the Company's common stock that is intended to satisfy the affirmative defense of Rule 10b5-1(c). The trading plan was set to expire on February 24, 2024 and provided for the sale of up to 135,000 shares of common stock, which was based upon the Company's stock price reaching a certain series of price thresholds.

On November 13, 2023, Mary Powell, our Chief Executive Officer and a member of our Board, adopted a trading plan for the sale of the Company's common stock that is intended to satisfy the affirmative defense of Rule 10b5-1(c). The trading plan will expire on December 31, 2024 and provides for the sale of up to 6,463 shares of common stock, subject to the Company's stock price reaching a certain price threshold.

On November 22, 2023, Jeanna Steele, our Chief Legal & People Officer, adopted a trading plan for the sale of the Company's common stock that is intended to satisfy the affirmative defense of Rule 10b5-1(c). The trading plan will expire on February 28, 2025 and provides for the following transactions, each of which is based upon the Company's stock price reaching a series of price thresholds: (i) the exercise of up to 111,398 stock options and the sale of the underlying shares of common stock, (ii) the sale of up to 21,000 shares of common stock, (iii) the sale of up to 81,842 restricted stock unit awards previously granted to Ms. Steele's that may vest and be released to her upon satisfaction of the applicable time-based and performance-based vesting conditions, and (iv) the sale of up to 2,157 shares of common stock that Ms. Steele may purchase under the ESPP, which is based in part on Ms. Steele's current salary. The actual number of shares that may be purchased under the ESPP will be affected by any changes to Ms. Steele's base salary and the stock price of the Company as calculated in accordance with the terms of the ESPP.

On November 24, 2023, Paul Dickson, our Chief Revenue Officer, adopted a trading plan for the sale of the Company's common stock that is intended to satisfy the affirmative defense of Rule 10b5-1(c). The trading plan will expire on February 20, 2025 and provides for the following transactions, each of which is based upon the Company's stock price reaching a series of price thresholds: (i) the exercise of up to 55,067 stock options and the sale of the underlying shares of common stock, (ii) the sale of up to 50,376 shares of common stock, and (iii) the sale of up to 55,214 restricted stock unit awards previously granted to Mr. Dickson that may vest and be released to him upon satisfaction of the applicable time-based and performance-based vesting conditions.

On November 30, 2023, Lynn Jurich, our Co-Executive Chair and a member of our Board, adopted a trading plan for the sale of the Company's common stock that is intended to satisfy the affirmative defense of Rule 10b5-1(c). The trading plan will expire on February 20, 2025 and provides for the following transactions, each of which is based upon the Company's stock price reaching a series of price thresholds: (i) the exercise of up to 145,988 stock options and the sale of the underlying shares of common stock, and (ii) the sale of up to 850,000 shares of common stock, some of which are subject to the Company's stock price reaching a certain price threshold.

Item 9C. Disclosure Regarding Foreign Jurisdictions that Prevent Inspections.

Not Applicable.

PART III

Item 10. Directors, Executive Officers and Corporate Governance.

The information required by this Item 10 of Form 10-K will be set forth in our proxy statement to be filed with the SEC in connection with the solicitation of proxies for our 2024 Annual Meeting of Stockholders ("Proxy Statement") under the section titled "Directors, Executive Officers and Corporate Governance" and is incorporated herein by reference. The Proxy Statement will be filed with the SEC within 120 days after the year-end of the fiscal year which this report relates.

Item 11. Executive Compensation.

The information required by this Item 11 will be set forth in the Proxy Statement under the section titled "Executive Compensation" and is incorporated herein by reference.

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

The information required by this Item 12 will be set forth in the Proxy Statement under the section titled "Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters" and is incorporated herein by reference.

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

The information required by this Item 13 will be set forth in the Proxy Statement under the section titled "Certain Relationships and Related Transactions, and Director Independence" and is incorporated herein by reference.

Item 14. Principal Accounting Fees and Services.

The information required by this Item 14 will be set forth in the Proxy Statement under the section titled "Ratification of Appointment of Independent Registered Public Accounting Firm" and is incorporated herein by reference.

PART IV

Item 15. Exhibits and Financial Statement Schedules.

Documents filed as part of this report are as follows:

(1) Consolidated Financial Statements

Our Consolidated Financial Statements are listed in the “Index to Consolidated Financial Statements” under Item 8 of Part II of this Annual Report on Form 10-K.

(2) Financial Statement Schedules

The required information is included elsewhere in this Annual Report on Form 10-K, not applicable, or not material.

(3) Exhibits

The exhibits listed in the accompanying “Exhibit Index” are filed or incorporated by reference as part of this Annual Report on Form 10-K.

EXHIBIT INDEX

Exhibit Number	Exhibit Description	Incorporated by Reference				Filed Herewith
		Form	File No.	Exhibit	Filing Date	
3.1	Restated Certificate of Incorporation of Sunrun Inc.	8-K	001-37511	3.3	6/7/2023	
3.2	Bylaws of Sunrun Inc., Amended and Restated as of June 2, 2023	8-K	001-37511	3.4	6/7/2023	
4.1	Form of common stock certificate of the Registrant	S-1	333-205217	4.1	6/25/2015	
4.2	Form of Stock Issuance Agreement	S-1/A	333-205217	4.4	7/22/2015	
4.3	Indenture, dated January 28, 2021, between Sunrun Inc. and Wells Fargo Bank, National Association	8-K	001-37511	4.1	1/28/2021	
4.4	Form of 0% Convertible Senior Note due 2026	8-K	001-37511	4.2	1/28/2021	
4.5	Description of Capital Stock	10-K	001-37511	4.5	2/17/2022	
10.1+	Form of Indemnification Agreement between the Registrant and each of its directors and executive officers	S-1	333-205217	10.1	6/25/2015	
10.2+	Sunrun Inc. 2015 Equity Incentive Plan and related form agreements	S-1/A	333-205217	10.2	7/22/2015	
10.3+	Sunrun Inc. Amended and Restated Employee Stock Purchase Plan and related form agreements	10-Q	001-37511	10.1	8/9/2018	
10.4+	Sunrun-VSI 2014 Equity Incentive Plan, and the forms thereunder	10-Q	001-37511	10.1	8/5/2021	
10.5+	Sunrun Inc. 2014 Equity Incentive Plan	S-1	333-205217	10.4	6/25/2015	
10.6+	Sunrun Inc. 2013 Equity Incentive Plan and related form agreements	S-1	333-205217	10.5	6/25/2015	
10.7+	Sunrun Inc. 2008 Equity Incentive Plan and related form agreements	S-1	333-205217	10.6	6/25/2015	
10.8+	Sunrun Inc. Amended and Restated Executive Incentive Compensation Plan	8-K	001-37511	10.1	2/4/2020	
10.9+	Vivint Solar, Inc. 2014 Equity Incentive Plan	S-1	333-198372	10.3	9/18/2014	
10.10+	Form of Notice of Stock Option Grant and Stock Option Agreement under the Vivint Solar, Inc. 2014 Equity Incentive Plan	10-Q	001-36642	10.15	11/12/2014	
10.11+	Form of Notice of Restricted Stock Unit Grant and Restricted Stock Unit Agreement under the Vivint Solar, Inc. 2014 Equity Incentive Plan	10-Q	001-36642	10.16	11/12/2014	
10.12+	V Solar Holdings, Inc. 2013 Omnibus Incentive Plan	S-1	333-198372	10.2	8/26/2014	
10.13+	Form of Stock Option Agreement under the V Solar Holdings, Inc. 2013 Omnibus Incentive Plan	10-Q	001-36642	10.17	11/12/2014	
10.14+	Key Employee Change in Control and Severance Plan and Summary Plan Description	10-Q	001-37511	10.1	11/7/2018	
10.15+	Amended and Restated Confirmatory Employment Letter by and between Edward Fenster and Sunrun, Inc., dated February 22, 2023	8-K	001-37511	10.1	2/22/2023	
10.16+	Amended and Restated Confirmatory Employment Letter by and between Lynn Jurich and Sunrun, Inc., dated February 22, 2023	8-K	001-37511	10.2	2/22/2023	

Exhibit Number	Exhibit Description	Incorporated by Reference				Filed Herewith
		Form	File No.	Exhibit	Filing Date	
10.17+	Executive Employment Agreement between Sunrun Inc. and Jeanna Steele, dated November 30, 2021	10-K	001-37511	10.20	2/17/2022	
10.18+	Employment Agreement between Sunrun Inc. and Paul Dickson, dated December 3, 2021	10-K	001-37511	10.21	2/17/2022	
10.19+	Employment Agreement by and between Danny Abajian and Sunrun Inc., dated April 28, 2022	8-K	001-37511	10.1	5/4/2022	
10.20+	Board Services Agreement between the Registrant and Gerald Risk, dated as of February 1, 2014	S-1	333-205217	10.15	6/25/2015	
10.21+	Amended and Restated Non-Employee Director Pay Policy, Amended July 28, 2023					X
10.22	Subscription Agreement dated July 29, 2020, between Sunrun Inc. and SK E&S Co., Ltd.	8-K	001-37511	10.1	7/30/2020	
10.23	Purchase Agreement, dated January 25, 2021, by and among Sunrun Inc. Credit Suisse Securities (USA) LLC and Morgan Stanley & Co. LLC, as representatives of the several initial purchasers named in Schedule I thereto	8-K	001-37511	10.1	1/28/2021	
10.24	Form of Capped Call Confirmation	8-K	001-37511	10.2	1/28/2021	
10.25+	Employment Agreement between Sunrun Inc. and Mary Powell, dated August 31, 2021	8-K	001-37511	10.2	8/5/2021	
10.26¥	Credit Agreement, dated as of January 24, 2022, by and among the Company, KeyBank National Association, as administrative agent, Silicon Valley Bank, as collateral agent, and each of the guarantors, lenders, and arrangers identified on the signature pages thereto	8-K	001-37511	10.1	1/26/2022	
10.27¥	Credit Agreement, dated as of January 24, 2022, by and among the Company, KeyBank National Association, as administrative agent, Silicon Valley Bank, as collateral agent, and each of the guarantors, lenders and arrangers identified on the signature pages thereto, and as amended by Amendment No. 1 to the Credit Agreement, dated as of March 8, 2022	10-Q	001-37511	10.2	5/4/2022	
10.28¥	Credit Agreement, dated as of January 24, 2022, by and among the Company, KeyBank National Association, as administrative agent, Silicon Valley Bank, as collateral agent, and each of the guarantors, lenders and arrangers identified on the signature pages thereto, and as amended by Amendment No. 1 to the Credit Agreement, dated as of March 8, 2022, and as further amended by Amendment No. 2 to the Credit Agreement, dated as of November 2, 2022	10-K	001-37511	10.36	2/22/2023	

Exhibit Number	Exhibit Description	Incorporated by Reference				Filed Herewith
		Form	File No.	Exhibit	Filing Date	
10.29¥	Credit Agreement, dated as of April 20, 2021, by and among Sunrun Luna Portfolio 2021, LLC, as Borrower, Atlas Securitized Products Holdings, L.P., as Administrative Agent, Wells Fargo Bank, National Association, as Collateral Agent and Paying Agent, and the Lenders and Funding Agents party thereto from time to time, as amended by the Amendment to the Credit Agreement, dated as of May 5, 2021, the Second Amendment to Credit Agreement, dated as of October 8, 2021, the Third Amendment to Credit Agreement, dated as of March 23, 2022, Fourth Amendment to Credit Agreement and First Amendment to Amended and Restated Custodial Agreement, dated as of May 10, 2023, the Fifth Amendment to Credit Agreement and First Amendment to Transaction Management Agreement, dated as of December 27, 2023, and the Sixth Amendment to the Credit Agreement, dated as of February 16, 2024.					X
10.30¥	Credit Agreement, dated as of January 24, 2022, by and among the Company, KeyBank National Association, as administrative agent, Silicon Valley Bank, a division of First-Citizens Bank & Trust Company, as collateral agent, and each of the guarantors, lenders and arrangers identified on the signature pages thereto, and as amended by Amendment No. 1 to the Credit Agreement, dated as of March 8, 2022, as further amended by Amendment No. 2 to the Credit Agreement, dated as of November 2, 2022, and as further amended by Amendment No. 3 to the Credit Agreement, dated as of February 20, 2024.					X
21.1	List of subsidiaries of the Registrant					X
23.1	Consent of Independent Registered Public Accounting Firm					X
31.1	Certification of Chief Executive Officer pursuant to Exchange Act Rules 13a-14(a) and 15d-14(a), as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002					X
31.2	Certification of Chief Financial Officer pursuant to Exchange Act Rules 13a-14(a) and 15d-14(a), as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002					X
32.1†	Certifications of Chief Executive Officer and Chief Financial Officer pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002					X
97.1	Policy for Recoupment of Incentive Compensation					X
101.INS	XBRL Instance Document - the instance document does not appear in the Interactive Data File because its XBRL tags are embedded within the In-line XBRL document					
101.SCH	XBRL Taxonomy Schema Linkbase Document					

Exhibit Number	Exhibit Description	Incorporated by Reference				Filed Herewith
		Form	File No.	Exhibit	Filing Date	
101.CAL	XBRL Taxonomy Definition Linkbase Document					
101.DEF	XBRL Taxonomy Calculation Linkbase Document					
101.LAB	XBRL Taxonomy Labels Linkbase Document					
101.PRE	XBRL Taxonomy Presentation Linkbase Document					
104	Cover Page Interactive Data File - the cover page interactive data file does not appear in the Interactive Data File because its XBRL tags are embedded within the In-line XBRL document.					

† The certifications attached as Exhibit 32.1 that accompany this Annual Report on Form 10-K, are deemed furnished and not filed with the Securities and Exchange Commission and are not to be incorporated by reference into any filing of Sunrun Inc. 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 Annual Report on Form 10-K, irrespective of any general incorporation language contained in such filing.

\+ Indicates management contract or compensatory plan.

¥ Confidential treatment has been requested as to certain portions of this exhibit, which portions have been omitted and submitted separately to the Securities and Exchange Commission.

^ Portions of this exhibit have been omitted from the exhibit because they are both not material and would be competitively harmful if publicly disclosed.

Item 16. Form 10-K Summary.

None.

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.

Sunrun Inc.

Date: February 21, 2024

By: /s/ Mary Powell

Mary Powell

Chief Executive Officer and Director

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.

Name	Title	Date
/s/ Mary Powell **Mary Powell**	Chief Executive Officer and Director (Principal Executive Officer)	February 21, 2024
/s/ Danny Abajian **Danny Abajian**	Chief Financial Officer (Principal Financial and Accounting Officer)	February 21, 2024
/s/ Lynn Jurich **Lynn Jurich**	Co-Chair and Director	February 21, 2024
/s/ Edward Fenster **Edward Fenster**	Co-Chair and Director	February 21, 2024
/s/ Katherine August-deWilde **Katherine August-deWilde**	Director	February 21, 2024
/s/ Leslie Dach **Leslie Dach**	Director	February 21, 2024
/s/ Alan Ferber **Alan Ferber**	Director	February 21, 2024
/s/ Sonita Lontoh **Sonita Lontoh**	Director	February 21, 2024
/s/ Gerald Risk **Gerald Risk**	Director	February 21, 2024
/s/ Manjula Talreja **Manjula Talreja**	Director	February 21, 2024

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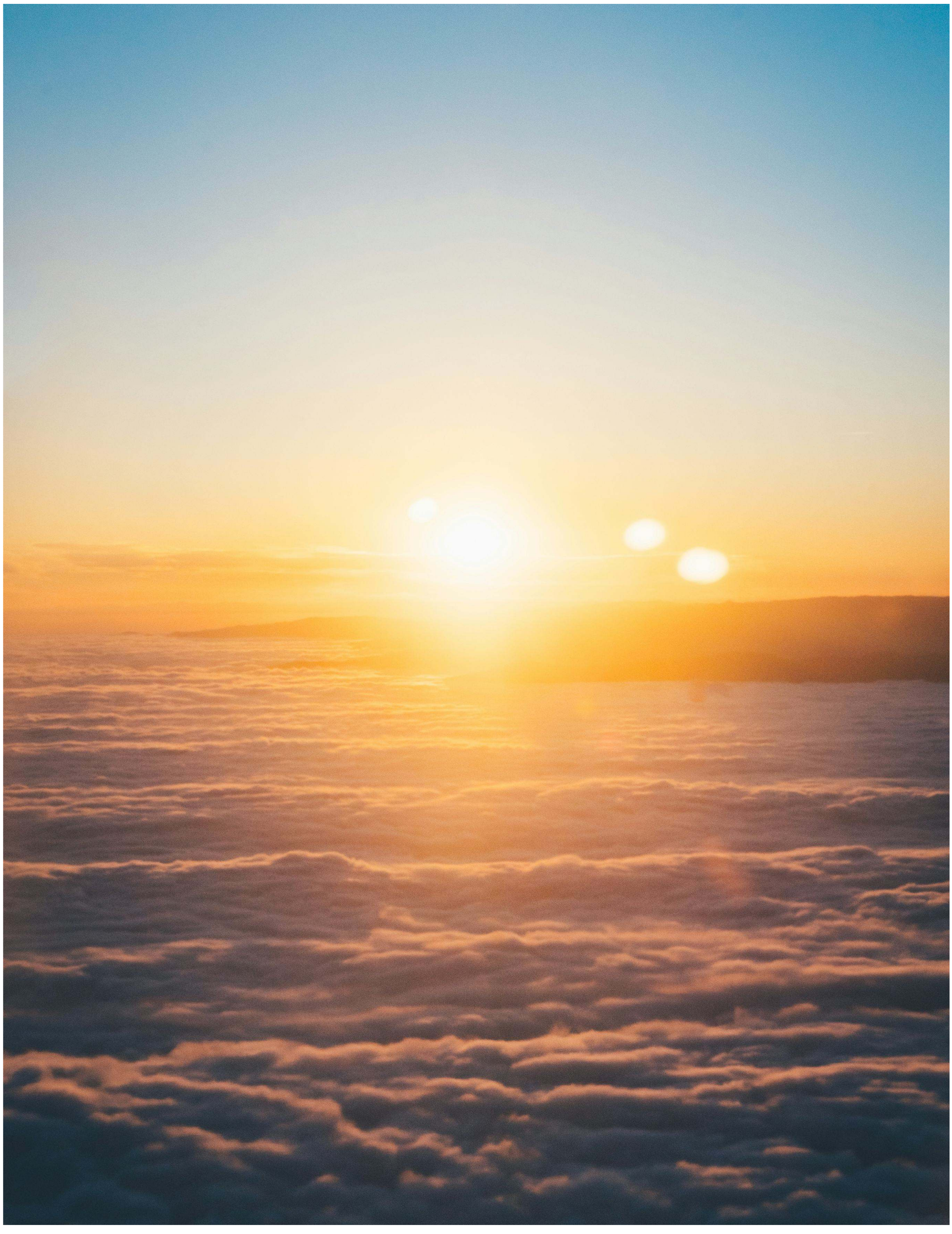
2023 Annual Report