

**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, 2020

OR

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

For the transition period from _____ to _____

Commission File Number: 001-34756

Tesla, Inc.

(Exact name of registrant as specified in its charter)

Delaware
(State or other jurisdiction of
incorporation or organization)

3500 Deer Creek Road
Palo Alto, California
(Address of principal executive offices)

91-2197729
(I.R.S. Employer
Identification No.)

94304
(Zip Code)

(650) 681-5000

(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	TSLA	The Nasdaq Global Select Market

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

None

Indicate by check mark whether the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes ☒ No ☐

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or 15(d) of the Act. Yes ☐ No ☒

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 ("Exchange Act") 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 <input checked="" type="checkbox"/>	Accelerated filer <input type="checkbox"/>
Non-accelerated filer <input type="checkbox"/>	Smaller reporting company <input type="checkbox"/>
Emerging growth company <input type="checkbox"/>	

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. ☒

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

The aggregate market value of voting stock held by non-affiliates of the registrant, as of June 30, 2020, the last day of the registrant's most recently completed second fiscal quarter, was \$160.57 billion (based on the closing price for shares of the registrant's Common Stock as reported by the NASDAQ Global Select Market on June 30, 2020). Shares of Common Stock held by each executive officer, director, and holder of 5% or more of the outstanding Common Stock have been excluded in that such persons may be deemed to be affiliates. This determination of affiliate status is not necessarily a conclusive determination for other purposes.

As of February 1, 2021, there were 959,853,504 shares of the registrant's Common Stock outstanding.

DOCUMENTS INCORPORATED BY REFERENCE

Portions of the registrant's Proxy Statement for the 2021 Annual Meeting of Stockholders are incorporated herein by reference in Part III of this Annual Report on Form 10-K to the extent stated herein. Such proxy statement will be filed with the Securities and Exchange Commission within 120 days of the registrant's fiscal year ended December 31, 2020.

TESLA, INC.

ANNUAL REPORT ON FORM 10-K FOR THE YEAR ENDED DECEMBER 31, 2020

INDEX

	<u>Page</u>
<u>PART I.</u>	
Item 1. Business	4
Item 1A. Risk Factors	14
Item 1B. Unresolved Staff Comments	27
Item 2. Properties	27
Item 3. Legal Proceedings	28
Item 4. Mine Safety Disclosures	28
<u>PART II.</u>	
Item 5. Market for Registrant’s Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities	29
Item 6. Selected Consolidated Financial Data	30
Item 7. Management’s Discussion and Analysis of Financial Condition and Results of Operations	31
Item 7A. Quantitative and Qualitative Disclosures About Market Risk	49
Item 8. Financial Statements and Supplementary Data	50
Item 9. Changes in and Disagreements with Accountants on Accounting and Financial Disclosure	107
Item 9A. Controls and Procedures	107
Item 9B. Other Information	107
<u>PART III.</u>	
Item 10. Directors, Executive Officers and Corporate Governance	108
Item 11. Executive Compensation	108
Item 12. Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters	108
Item 13. Certain Relationships and Related Transactions, and Director Independence	108
Item 14. Principal Accountant Fees and Services	108
<u>PART IV.</u>	
Item 15. Exhibits and Financial Statement Schedules	108
Item 16. Summary	125
Signatures	126

Forward-Looking Statements

The discussions in this Annual Report on Form 10-K contain forward-looking statements reflecting our current expectations that involve risks and uncertainties. These forward-looking statements include, but are not limited to, statements concerning any potential future impact of the coronavirus disease (“COVID-19”) pandemic on our business, our strategy, future operations, future financial position, future revenues, projected costs, profitability, expected cost reductions, capital adequacy, expectations regarding demand and acceptance for our technologies, growth opportunities and trends in the market in which we operate, prospects and plans and objectives of management. The words “anticipates,” “believes,” “could,” “estimates,” “expects,” “intends,” “may,” “plans,” “projects,” “will,” “would” and similar expressions are intended to identify forward-looking statements, although not all forward-looking statements contain these identifying words. We may not actually achieve the plans, intentions or expectations disclosed in our forward-looking statements and you should not place undue reliance on our forward-looking statements. Actual results or events could differ materially from the plans, intentions and expectations disclosed in the forward-looking statements that we make. These forward-looking statements involve risks and uncertainties that could cause our actual results to differ materially from those in the forward-looking statements, including, without limitation, the risks set forth in Part I, Item 1A, “Risk Factors” in this Annual Report on Form 10-K and in our other filings with the Securities and Exchange Commission. We do not assume any obligation to update any forward-looking statements.

PART I

ITEM 1. BUSINESS

Overview

We design, develop, manufacture, sell and lease high-performance fully electric vehicles and energy generation and storage systems, and offer services related to our sustainable energy products. We generally sell our products directly to customers, including through our website and retail locations. We also continue to grow our customer-facing infrastructure through a global network of vehicle service centers, Mobile Service technicians, body shops, Supercharger stations and Destination Chargers to accelerate the widespread adoption of our products. We emphasize performance, attractive styling and the safety of our users and workforce in the design and manufacture of our products and are continuing to develop full self-driving technology for improved safety. We also strive to lower the cost of ownership for our customers through continuous efforts to reduce manufacturing costs and by offering financial services tailored to our products. Our mission to accelerate the world's transition to sustainable energy, engineering expertise, vertically integrated business model and focus on user experience differentiate us from other companies.

Segment Information

We operate as two reportable segments: (i) automotive and (ii) energy generation and storage.

The automotive segment includes the design, development, manufacturing, sales and leasing of electric vehicles as well as sales of automotive regulatory credits. Additionally, the automotive segment is also comprised of services and other, which includes non-warranty after-sales vehicle services, sales of used vehicles, retail merchandise, sales by our acquired subsidiaries to third party customers and vehicle insurance revenue. The energy generation and storage segment includes the design, manufacture, installation, sales and leasing of solar energy generation and energy storage products and related services and sales of solar energy systems incentives.

Our Products and Services

Automotive

Model 3

Model 3 is a four-door mid-size sedan that we designed for manufacturability with a base price for mass-market appeal, which we began delivering in July 2017. We currently manufacture Model 3 at the Fremont Factory and at Gigafactory Shanghai.

Model Y

Model Y is a compact sport utility vehicle ("SUV") built on the Model 3 platform with seating for up to seven adults, which we began delivering in March 2020. We currently manufacture Model Y at the Fremont Factory and at Gigafactory Shanghai.

Model S and Model X

Model S is a four-door full-size sedan that we began delivering in June 2012. Model X is a mid-size SUV with seating for up to seven adults, which we began delivering in September 2015. Model S and Model X feature the highest performance characteristics and longest ranges that we offer in a sedan and SUV, respectively, and we manufacture both models at the Fremont Factory.

Future Consumer and Commercial Electric Vehicles

We have also announced several planned electric vehicles to address additional vehicle markets, including specialized consumer electric vehicles in Cybertruck and the new Tesla Roadster and a commercial electric vehicle in Tesla Semi. We also plan to introduce in the future a lower-cost vehicle to leverage developments in our proprietary Full Self-Driving ("FSD"), battery cell and other technologies.

Energy Generation and Storage

Energy Storage Products

We began deliveries of the most recent generations of Powerwall, Powerpack and Megapack, which are our lithium-ion battery energy storage products integrated with inverters and control technology, in 2016, 2017 and 2019, respectively. Powerwall is designed to store energy at a home or small commercial facility. Megapack and Powerpack are energy storage solutions for commercial, industrial, utility and energy generation customers, which may be grouped together to form larger installations capable of reaching gigawatt hours ("GWh") or greater. We also offer integrated systems combining energy generation and storage. Our energy storage products are currently assembled at Gigafactory Nevada.

We have also developed software capabilities for remotely controlling and dispatching our energy storage systems across a wide range of markets and applications, including through our real-time energy trading platform.

Solar Energy Offerings

We sell retrofit solar energy systems to customers and channel partners and also make them available through lease and power purchase agreement (“PPA”) arrangements and a subscription-based sale of solar power, which is currently available in limited U.S. markets. We purchase most of the components for our retrofit solar energy systems from multiple sources to ensure competitive pricing and adequate supply. We also design and manufacture certain components for our solar energy products.

In 2019, we commenced direct customer and channel partner sales of the third generation of our Solar Roof, which combines premium glass roof tiles with energy generation. We are ramping the volume production of Solar Roof at Gigafactory New York, and we are improving our installation capability and efficiency.

Technology

Automotive

Battery and Powertrain

Our core vehicle technology competencies include powertrain engineering and manufacturing and our ability to design vehicles that utilize the unique advantages of an electric powertrain. We have designed our proprietary powertrain systems to be adaptable, efficient, reliable and cost-effective while withstanding the rigors of an automotive environment. We offer dual motor powertrain vehicles, which use two electric motors to maximize traction and performance in an all-wheel drive configuration, and are introducing vehicle powertrain technology featuring three electric motors for further increased performance.

Among other things, we maintain extensive testing and R&D capabilities for battery cells, packs and systems, and have built an expansive body of knowledge on lithium-ion cell chemistry types and performance characteristics. In order to enable a greater supply of cells for our products with higher energy density at lower costs, we are currently using our expertise to develop a new proprietary lithium-ion battery cell and improved manufacturing processes.

Vehicle Control and Infotainment Software

The performance and safety systems of our vehicles and their battery packs require sophisticated control software. Control systems in our vehicles optimize performance, customize vehicle behavior, manage charging and control all infotainment functions. We develop almost all of this software, including most of the user interfaces, internally and update our vehicles’ software regularly through over-the-air updates.

Self-Driving Development

We have expertise in developing technologies, systems and software to enable self-driving vehicles using primarily vision and radar-based sensors. Our FSD Computer runs our neural networks in our vehicles, and we are also developing additional computer hardware to better enable the massive amounts of field data captured by our vehicles to continually train and improve these neural networks for real-world performance.

Currently, we offer in our vehicles certain advanced driver assist systems under our Autopilot and FSD options. Although at present the driver is ultimately responsible for controlling the vehicle, our systems provide safety and convenience functionality that relieves drivers of the most tedious and potentially dangerous aspects of road travel much like the system that airplane pilots use, when conditions permit. As with other vehicle systems, we improve these functions in our vehicles over time through over-the-air updates.

We intend to establish in the future an autonomous Tesla ride-hailing network, which we expect would also allow us to access a new customer base even as modes of transportation evolve.

Energy Generation and Storage

Energy Storage Products

We leverage many of the component-level technologies from our vehicles in our energy storage products. By taking a modular approach to the design of battery systems, we can optimize manufacturing capacity among our energy storage products. Additionally, our expertise in power electronics enables us to interconnect our battery systems seamlessly with global electricity grids while providing fast-acting systems for power injection and absorption. We have also developed the software to remotely control and dispatch our energy storage systems using our real-time energy trading platform.

Solar Energy Systems

We have engineered Solar Roof over numerous iterations to combine aesthetic appeal and durability with power generation. The efficiency of our solar energy products is aided by our own solar inverter, which also incorporates our power electronics technologies. We designed both products to integrate with Powerwall.

Design and Engineering

Automotive

We have established significant in-house capabilities in the design and test engineering of electric vehicles and their components and systems. Our team has core competencies in computer aided design as well as durability, strength and crash test simulations, which reduces the product development time of new models. Additionally, our team has expertise in selecting and working with a range of materials for our vehicles to balance performance, cost and durability in ways that are best suited for our vehicles' target demographics and utility. We have also used our capabilities to achieve complex engineering feats in stamping, casting and thermal systems, and are currently developing designs that integrate batteries directly with vehicle body structures without separate battery packs to optimize manufacturability, weight, range and cost characteristics.

We are also expanding our manufacturing operations globally while exploring ways to localize our vehicle designs and production for particular markets, including country-specific market demands and factory optimizations for local workforces. As we increase our capabilities, particularly in the areas of automation, die-making and line-building, we are also making strides in the simulations modeling these capabilities prior to construction.

Energy Generation and Storage

Our expertise in electrical, mechanical, civil and software engineering allows us to design and manufacture our energy generation and storage products and components. We also employ our design and engineering expertise to customize solutions including our energy storage products, solar energy systems and/or Solar Roof for customers to meet their specific needs. We have developed software that simplifies and expedites the design process and maximizes the energy production of each solar energy system, as well as mounting hardware that facilitates solar panel installation.

Sales and Marketing

Historically, we have been able to generate significant media coverage of our company and our products, and we believe we will continue to do so. Such media coverage and word of mouth are the current primary drivers of our sales leads and have helped us achieve sales without traditional advertising and at relatively low marketing costs.

Automotive

Direct Sales

Our vehicle sales channels currently include our website and an international network of company-owned stores. In some jurisdictions, we also have galleries to educate and inform customers about our products, but such locations do not actually transact in the sale of vehicles. We believe this infrastructure enables us to better control costs of inventory, manage warranty service and pricing, educate consumers about electric vehicles, maintain and strengthen the Tesla brand and obtain rapid customer feedback.

We reevaluate our sales strategy both globally and at a location-by-location level from time to time to optimize our current sales channels. Sales of vehicles in the automobile industry tend to be cyclical in many markets, which may expose us to volatility from time to time.

Used Vehicle Sales

Our used vehicle business supports new vehicle sales by integrating the trade-in of a customer's existing Tesla or non-Tesla vehicle with the sale of a new or used Tesla vehicle. The Tesla and non-Tesla vehicles we acquire as trade-ins are subsequently remarketed, either directly by us or through third parties. We also remarket used Tesla vehicles acquired from other sources including lease returns.

Public Charging

We have a growing global network of Tesla Superchargers, which are our industrial grade, high-speed vehicle chargers. Where possible, we co-locate Superchargers with our solar and energy storage systems to reduce costs and promote renewable power. Supercharger stations are typically placed along well-traveled routes and in and around dense city centers to allow Tesla vehicle owners the ability to enjoy quick, reliable and ubiquitous charging with convenient, minimal stops. Use of the Supercharger network either requires payment of a fee or is free under certain sales programs.

We also work with a wide variety of hospitality, retail and public destinations, as well as businesses with commuting employees, to offer additional charging options for our customers. These Destination Charging and workplace locations deploy Tesla Wall Connectors to provide charging to Tesla vehicle owners who patronize or are employed at their businesses. We also work with single-family homeowners and multi-family residential entities to deploy home charging solutions.

In-App Upgrades

As our vehicles are capable of being updated remotely over-the-air, our customers may purchase additional paid options and features through the Tesla app. We expect that this functionality will also allow us to offer certain options and features on a subscription basis in the future.

Energy Generation and Storage

We market and sell our solar and energy storage products to residential, commercial and industrial customers and utilities through a variety of channels. We emphasize simplicity, standardization and accessibility to make it easy and cost-effective for customers to adopt clean energy, while reducing our customer acquisition costs.

In the U.S., we offer residential solar and energy storage products directly through our website, stores and galleries, as well as through our network of channel partners. Outside of the U.S., we use our international sales organization and a network of channel partners to market and sell these products for the residential market. We also sell Powerwall directly to utilities. In the case of products sold to utilities or channel partners, such partners typically sell the product and manage the installation in customer homes.

We sell our commercial and utility-scale energy storage systems to customers through our U.S. and international sales organization and our channel partner network. In certain jurisdictions, we also sell installed solar energy systems (with or without energy storage) to commercial customers through cash, lease and PPA transactions.

Service and Warranty

Automotive

Service

We provide service for our electric vehicles at our company-owned service locations and through Tesla Mobile Service technicians who perform work remotely at customers' homes or other locations. Performing vehicle service ourselves provides us with the capability to identify problems and implement solutions and improvements faster, and optimize logistics and inventory better, than traditional automobile manufacturers and their dealer networks. The connectivity of our vehicles also allows us to diagnose and remedy many problems remotely and proactively.

Vehicle Limited Warranties and Extended Service Plans

We provide a manufacturer's limited warranty on all new and used Tesla vehicles we sell, which may include separate limited warranties on certain components, specific types of damage or battery capacity retention. We also currently offer extended service plans that provide coverage beyond the new vehicle limited warranties for certain models in specified regions.

Energy Generation and Storage

We provide service and repairs to our energy product customers, including under warranty where applicable.

Energy Storage Systems

We generally provide manufacturer's limited warranties with every new energy storage product and offer certain extended limited warranties that are available at the time of purchase of the system. If we install a system, we also provide certain limited warranties on our installation workmanship. As part of our energy storage system contracts, we may provide the customer with performance guarantees that warrant that the underlying system will meet or exceed the minimum energy performance requirements specified in the contract.

Solar Energy Systems

For retrofit solar energy systems, we provide separate limited warranties for workmanship and against roof leaks, and for Solar Roof, we provide limited warranties for defects and weatherization. For components not manufactured by us, we generally pass-through the applicable manufacturers' warranties. As part of our solar energy system contracts, we may provide the customer with performance guarantees that warrant that the underlying system will meet or exceed the minimum energy generation requirements specified in the contract.

Financial Services

Automotive

Purchase Financing and Leases

We offer leasing and/or loan financing arrangements for our vehicles in certain jurisdictions in North America, Europe and Asia through various financial institutions. Under certain of such programs, we have provided resale value guarantees or buyback guarantees that may obligate us to repurchase the subject vehicles at pre-determined values. We also offer vehicle financing arrangements in certain markets for specified vehicle models directly through our local subsidiaries.

Insurance

In August 2019, we launched an insurance product designed for our customers, which offers rates that are often better than other alternatives. This product is currently available in California, and we plan to expand both the markets in which we offer insurance products and our ability to offer such products, as part of our ongoing effort to decrease the total cost of ownership for our customers.

Energy Generation and Storage

Energy Storage Systems

We currently offer certain loan, lease and/or PPA options to residential or commercial customers who pair energy storage systems with solar energy systems. We intend to introduce financial services offerings for customers who purchase standalone energy storage products in the future.

Solar Energy Systems

We offer various financing options to our solar customers. Our solar loan offers third-party financing to enable the customer to purchase and own a solar energy system. We are not a party to the loan agreement, and the third-party lender has no recourse against us with respect to the loan. Our solar lease offers customers a fixed monthly fee at rates that typically translate into lower monthly utility bills and an electricity production guarantee. Our solar PPA charges customers a fee per kilowatt-hour based on the amount of electricity produced by our solar energy systems. We monetize the customer payments we receive from our leases and PPAs through funds we have formed with investors. We also intend to introduce financial services offerings for our Solar Roof customers in the future.

Manufacturing

Manufacturing Facilities in the Bay Area, California

We manufacture and test our vehicles at our manufacturing facilities in the Bay Area in California, including the Fremont Factory and other local manufacturing facilities. We also manufacture and develop certain parts and components that are critical to our intellectual property and quality standards, such as Model S and Model X battery packs and our proprietary lithium-ion battery cells, at these locations.

Gigafactory Nevada near Reno, Nevada

We have integrated battery material, cell, module and battery pack production for Model 3, Model Y and our energy products in one location at Gigafactory Nevada. In addition, we manufacture vehicle drive units and our energy storage products there. Gigafactory Nevada allows us to access high volumes of lithium-ion battery cells manufactured by our partner Panasonic there while achieving a significant reduction in the cost of our battery packs. We continue to invest in Gigafactory Nevada to achieve additional output there, including through our agreement with Panasonic.

Gigafactory New York in Buffalo, New York

We use Gigafactory New York for the development and production of our Solar Roof and other solar products and components, energy storage components and Supercharger components, and for other lessor-approved functions.

Gigafactory Shanghai in China

We established Gigafactory Shanghai to increase the affordability of our vehicles for customers in local markets by reducing transportation and manufacturing costs and eliminating the impact of unfavorable tariffs. We continue to increase the degree of localized procurement and manufacturing there. Gigafactory Shanghai is representative of our plan to iteratively improve our manufacturing operations as we establish new factories, as we implemented the learnings from our Model 3 ramp at the Fremont Factory to commence and ramp our production there quickly and cost-effectively.

Other Manufacturing

Generally, we continue to expand production capacity at our existing facilities. We also intend to further increase cost-competitiveness in our significant markets by strategically adding local manufacturing, including at Gigafactory Berlin in Germany and Gigafactory Texas in Austin, Texas, which are under construction.

Supply Chain

Our products use thousands of purchased parts that are sourced from hundreds of suppliers across the world. We have developed close relationships with vendors of key parts such as battery cells, electronics and complex vehicle assemblies. Certain components purchased from these suppliers are shared or are similar across many product lines, allowing us to take advantage of pricing efficiencies from economies of scale.

As is the case for most automotive companies, most of our procured components and systems are sourced from single suppliers. Where multiple sources are available for certain key components, we work to qualify multiple suppliers for them where it is sensible to do so in order to minimize production risks owing to disruptions in their supply. We also mitigate risk by maintaining safety stock for key parts and assemblies and die banks for components with lengthy procurement lead times.

Our products use various raw materials including aluminum, steel, cobalt, lithium, nickel and copper. Pricing for these materials is governed by market conditions and may fluctuate due to various factors outside of our control, such as supply and demand and market speculation. We strive to execute long-term supply contracts for such materials at competitive pricing when feasible, and we currently believe that we have adequate access to raw materials supplies in order to meet the needs of our operations.

Governmental Programs, Incentives and Regulations

Globally, both the operation of our business by us and the ownership of our products by our customers are impacted by various government programs, incentives and other arrangements. Our business and products are also subject to numerous governmental regulations that vary among jurisdictions.

Programs and Incentives

California Alternative Energy and Advanced Transportation Financing Authority Tax Incentives

We have agreements with the California Alternative Energy and Advanced Transportation Financing Authority that provide multi-year sales tax exclusions on purchases of manufacturing equipment that will be used for specific purposes, including the expansion and ongoing development of electric vehicles and powertrain production in California.

Gigafactory Nevada—Nevada Tax Incentives

In connection with the construction of Gigafactory Nevada, we entered into agreements with the State of Nevada and Storey County in Nevada that provide abatements for specified taxes, discounts to the base tariff energy rates and transferable tax credits in consideration of capital investment and hiring targets that were met at Gigafactory Nevada. These incentives are available until June 2024 or June 2023, depending on the incentive.

Gigafactory New York—New York State Investment and Lease

We have a lease through the Research Foundation for the State University of New York (the “SUNY Foundation”) with respect to Gigafactory New York. Under the lease and a related research and development agreement, we are continuing to designate further buildouts at the facility. We are required to comply with certain covenants, including hiring and cumulative investment targets.

As we temporarily suspended most of our manufacturing operations at Gigafactory New York pursuant to a New York State executive order issued in March 2020 as a result of the COVID-19 pandemic, we were granted a one-year deferral of our obligation to be compliant with our applicable targets under such agreement on April 30, 2020, which was memorialized in an amendment to our agreement with the SUNY Foundation in July 2020.

Gigafactory Shanghai—Land Use Rights and Economic Benefits

We have an agreement with the local government of Shanghai for land use rights at Gigafactory Shanghai. Under the terms of the arrangement, we are required to meet a cumulative capital expenditure target and an annual tax revenue target starting at the end of 2023. In addition, the Shanghai government has granted to our Gigafactory Shanghai subsidiary in 2019 and 2020 certain incentives to be used in connection with eligible capital investments at Gigafactory Shanghai. Finally, the Shanghai government granted a beneficial corporate income tax rate of 15% to certain eligible enterprises, which is lower than the 25% statutory corporate income tax rate in China. Our Gigafactory Shanghai subsidiary was granted this lower rate for 2019 through 2023.

Gigafactory Berlin – Pending Grant

We have applied for a grant with the German government to improve the design, chemistry, manufacturing technology and recycling of lithium-ion battery cells for Gigafactory Berlin. The grant was approved by the European Commission in January 2021 and its implementation will be subject to a grant agreement with the German government.

Gigafactory Texas – Tax Incentives

In connection with the construction of Gigafactory Texas, we entered into a 20-year agreement with Travis County in Texas pursuant to which we would receive grant funding equal to 70-80% of property taxes paid by us to Travis County and a separate 10-year agreement with the Del Valle Independent School District in Texas pursuant to which a portion of the taxable value of our property would be capped at a specified amount, in each case subject to our meeting certain minimum economic development metrics through our construction and operations at Gigafactory Texas.

Regulatory Credits

We earn tradable credits in the operation of our business under various regulations related to zero-emission vehicles (“ZEVs”), greenhouse gas, fuel economy, renewable energy and clean fuel. We sell these credits to other regulated entities who can use the credits to comply with emission standards, renewable energy procurement standards and other regulatory requirements.

Energy Storage System Incentives and Policies

While the regulatory regime for energy storage projects is still under development, there are various policies, incentives and financial mechanisms at the federal, state and local levels that support the adoption of energy storage.

For example, energy storage systems that are charged using solar energy may be eligible for the solar energy-related U.S. federal tax credits described below. The Federal Energy Regulatory Commission (“FERC”) has also taken steps to enable the participation of energy storage in wholesale energy markets. In addition, California and a number of other states have adopted procurement targets for energy storage, and behind-the-meter energy storage systems qualify for funding under the California Self Generation Incentive Program.

Solar Energy System Incentives and Policies

U.S. federal, state and local governments have established various policies, incentives and financial mechanisms to reduce the cost of solar energy and to accelerate the adoption of solar energy. These incentives include tax credits, cash grants, tax abatements and rebates.

In particular, Sections 48 and 25D of the U.S. Internal Revenue Code currently provide a tax credit of 26% of qualified commercial or residential expenditures for solar energy systems, which may be claimed by our customers for systems they purchase, or by us for arrangements where we own the systems. These tax credits are currently scheduled to decline and/or expire in 2023 and beyond.

Regulations

Vehicle Safety and Testing

In the U.S., our vehicles are subject to regulation by the National Highway Traffic Safety Administration (“NHTSA”), including all applicable Federal Motor Vehicle Safety Standards (“FMVSS”) and the NHTSA bumper standard. Numerous FMVSS apply to our vehicles, such as crash-worthiness requirements, crash avoidance requirements and electric vehicle requirements. While our current vehicles fully comply and we expect that our vehicles in the future will fully comply with all applicable FMVSS with limited or no exemptions, FMVSS are subject to change from time to time. As a manufacturer, we must self-certify that our vehicles meet all applicable FMVSS and the NHTSA bumper standard, or otherwise are exempt, before the vehicles may be imported or sold in the U.S.

We are also required to comply with other federal laws administered by NHTSA, including the CAFE standards, Theft Prevention Act requirements, consumer information labeling requirements, Early Warning Reporting requirements regarding warranty claims, field reports, death and injury reports and foreign recalls, owner’s manual requirements and additional requirements for cooperating with safety investigations and defect and recall reporting. The U.S. Automobile Information and Disclosure Act also requires manufacturers of motor vehicles to disclose certain information regarding the manufacturer’s suggested retail price, optional equipment and pricing. In addition, federal law requires inclusion of fuel economy ratings, as determined by the U.S. Department of Transportation and the Environmental Protection Agency (the “EPA”), and 5-star safety ratings as determined by NHTSA, if available.

Our vehicles sold outside of the U.S. are subject to similar foreign safety, environmental and other regulations. Many of those regulations are different from those applicable in the U.S. and may require redesign and/or retesting. Some of those regulations impact or prevent the rollout of new vehicle features. Additionally, the European Union has established new rules regarding additional compliance oversight that commenced in 2020, and there is also regulatory uncertainty related to the United Kingdom's withdrawal from the European Union.

Self-Driving Vehicles

Generally, laws pertaining to self-driving vehicles are evolving globally, and in some cases may create restrictions on self-driving features that we develop. While there are currently no federal U.S. regulations specifically pertaining to self-driving vehicles or self-driving equipment, NHTSA has published recommended guidelines on self-driving vehicles, and retains the authority to investigate and/or take action on the safety of any vehicle, equipment or features operating on public roads. Certain U.S. states have legal restrictions on the operation, registration or licensure of self-driving vehicles, and many other states are considering them. This regulatory patchwork increases the legal complexity with respect to self-driving vehicles in the U.S.

In markets that follow the regulations of the United Nations Economic Commission for Europe, some requirements restrict the design of advanced driver-assistance or self-driving features, which can compromise or prevent their use entirely. Other applicable laws, both current and proposed, may hinder the path and timeline to introducing self-driving vehicles for sale and use in the markets where they apply.

Other key markets, including China, continue to consider self-driving regulation. Any implemented regulations may differ materially from those in the U.S. and Europe, which may further increase the legal complexity of self-driving vehicles and limit or prevent certain features.

Automobile Manufacturer and Dealer Regulation

In the U.S., state laws regulate the manufacture, distribution, sale and service of automobiles, and generally require motor vehicle manufacturers and dealers to be licensed in order to sell vehicles directly to residents. Certain states have asserted that the laws in such states do not permit automobile manufacturers to be licensed as dealers or to act in the capacity of a dealer, or that they otherwise restrict a manufacturer's ability to deliver or service vehicles. To sell vehicles to residents of states where we are not licensed as a dealer, we generally conduct the transfer of title out of the state. In certain such states, we have opened "galleries" that serve an educational purpose and where the title transfer may not occur.

Some automobile dealer trade associations have both challenged the legality of our operations in court and used administrative and legislative processes to attempt to prohibit or limit our ability to operate existing stores or expand to new locations. Certain dealer associations have also actively lobbied state licensing agencies and legislators to interpret existing laws or enact new laws in ways not favorable to our ownership and operation of our own retail and service locations. We expect such challenges to continue, and we intend to actively fight any such efforts.

Battery Safety and Testing

Our battery packs are subject to various U.S. and international regulations that govern transport of "dangerous goods," defined to include lithium-ion batteries, which may present a risk in transportation. We conduct testing to demonstrate our compliance with such regulations.

We use lithium-ion cells in our high voltage battery packs in our vehicles and energy storage products. The use, storage and disposal of our battery packs are regulated under existing laws and are the subject of ongoing regulatory changes that may add additional requirements in the future. We have agreements with third party battery recycling companies to recycle our battery packs and we are also piloting our own recycling technology.

Solar Energy—General

We are not a "regulated utility" in the U.S., although we are subject to certain state and federal regulations applicable to solar and battery storage providers. To operate our systems, we enter into standard interconnection agreements with applicable utilities. Sales of electricity and non-sale equipment leases by third parties, such as our leases, PPAs and subscription agreements, have faced regulatory challenges in some states and jurisdictions.

Solar Energy—Net Metering

Most states in the U.S. make net energy metering, or net metering, available to solar customers. Net metering typically allows solar customers to interconnect their solar energy systems to the utility grid and offset their utility electricity purchases by receiving a bill credit for excess energy generated by their solar energy system that is exported to the grid. In certain jurisdictions, regulators or utilities have reduced or eliminated the benefit available under net metering or have proposed to do so.

Competition

Automotive

The worldwide automotive market is highly competitive and we expect it will become even more competitive in the future as we introduce additional vehicles in a broader cross-section of the passenger and commercial vehicle market and expand our vehicles' capabilities.

We believe that our vehicles compete in the market both based on their traditional segment classification as well as based on their propulsion technology. For example, Model S and Model X compete primarily with premium sedans and premium SUVs and Model 3 and Model Y compete with small to medium-sized sedans and compact SUVs, which are extremely competitive markets. Competing products typically include internal combustion vehicles from more established automobile manufacturers; however, many established and new automobile manufacturers have entered or have announced plans to enter the market for electric and other alternative fuel vehicles. Overall, we believe these announcements and vehicle introductions promote the development of the electric vehicle market by highlighting the attractiveness of electric vehicles relative to the internal combustion vehicle. Many major automobile manufacturers have electric vehicles available today in major markets including the U.S., China and Europe, and other current and prospective automobile manufacturers are also developing electric vehicles. In addition, several manufacturers offer hybrid vehicles, including plug-in versions.

We also believe that there is increasing competition for our vehicle offerings as a platform for delivering self-driving technologies, charging solutions and other features and services, and we expect to compete in this developing market through continued progress on our Autopilot, FSD and neural network capabilities, Supercharger network and our infotainment offerings.

Energy Generation and Storage

Energy Storage Systems

The market for energy storage products is also highly competitive, and both established and emerging companies have introduced products that are similar to our product portfolio or that are alternatives to the elements of our systems. We compete with these companies based on price, energy density and efficiency. We believe that the specifications and features of our products, our strong brand and the modular, scalable nature of our energy storage products give us a competitive advantage in our markets.

Solar Energy Systems

The primary competitors to our solar energy business are the traditional local utility companies that supply energy to our potential customers. We compete with these traditional utility companies primarily based on price and the ease by which customers can switch to electricity generated by our solar energy systems. We also compete with solar energy companies that provide products and services similar to ours. Many solar energy companies only install solar energy systems, while others only provide financing for these installations. We believe we have a significant expansion opportunity with our offerings and that the regulatory environment is increasingly conducive to the adoption of renewable energy systems.

Intellectual Property

We place a strong emphasis on our innovative approach and proprietary designs which bring intrinsic value and uniqueness to our product portfolio. As part of our business, we seek to protect the underlying intellectual property rights of these innovations and designs such as with respect to patents, trademarks, copyrights, trade secrets and other measures, including through employee and third-party nondisclosure agreements and other contractual arrangements. For example, we place a high priority on obtaining patents to provide the broadest and strongest possible protection to enable our freedom to operate our innovations and designs within our products and technologies in the electric vehicle market as well as to protect and defend our product portfolio. We have also adopted a patent policy in which we irrevocably pledged that we will not initiate a lawsuit against any party for infringing our patents through activity relating to electric vehicles or related equipment for so long as such party is acting in good faith. We made this pledge in order to encourage the advancement of a common, rapidly-evolving platform for electric vehicles, thereby benefiting ourselves, other companies making electric vehicles and the world.

Human Capital Resources

As of December 31, 2020, our full-time count for our and our subsidiaries' employees worldwide was 70,757. To date, we have not experienced any work stoppages as a result of labor disputes, and we consider our relationship with our employees to be good. Our key human capital objectives in managing our business include attracting, developing and retaining top talent while integrating diversity, equity and inclusion principles and practices into our core values.

We want to attract a pool of diverse and exceptional candidates and support their career growth once they become employees. Our efforts begin at the entry level with development, apprenticeship and internship programs in local high schools, community colleges and four-year colleges. In addition, we seek to hire based on talent rather than solely on educational pedigree, and have provided thousands of job openings, including in our local communities, for capable workers from various backgrounds to learn valuable skills in critical operations such as in manufacturing, vehicle service and energy product installation. We also emphasize in our evaluation and career development efforts internal mobility opportunities for employees to drive professional development. Our goal is a long-term, upward-bound career at Tesla for every employee, which we believe also drives our retention efforts.

We also believe that our ability to retain our workforce is dependent on our ability to foster an environment that is sustainably safe, respectful, fair and inclusive of everyone and promotes diversity, equity and inclusion inside and outside of our business. From our outreach to Historically Black Colleges and Universities and Hispanic Serving Institutions to sponsoring employee resource groups across numerous locations, including Asian Pacific Islanders at Tesla, Black at Tesla, Intersectionality, Latinos at Tesla, LGBTQ at Tesla, Veterans at Tesla and Women in Tesla, we engage these networks as key business resources and sources of actionable feedback. We are also working on diversity efforts in our supply chain to expand our outreach and support to small- and large-scale suppliers from underrepresented communities to emphasize this culture with our own employees.

Available Information

We file or furnish periodic reports and amendments thereto, including our Annual Reports on Form 10-K, our Quarterly Reports on Form 10-Q and Current Reports on Form 8-K, proxy statements and other information with the Securities and Exchange Commission ("SEC"). In addition, the SEC maintains a website (www.sec.gov) that contains reports, proxy and information statements, and other information regarding issuers that file electronically. Our website is located at www.tesla.com, and our reports, amendments thereto, proxy statements and other information are also made available, free of charge, on our investor relations website at ir.tesla.com as soon as reasonably practicable after we electronically file or furnish such information with the SEC. The information posted on our website is not incorporated by reference into this Annual Report on Form 10-K.

ITEM 1A. RISK FACTORS

You should carefully consider the risks described below together with the other information set forth in this report, which could materially affect our business, financial condition and future results. The risks described below are not the only risks facing our company. Risks and uncertainties not currently known to us or that we currently deem to be immaterial also may materially adversely affect our business, financial condition and operating results.

Risks Related to Our Ability to Grow Our Business***We may be impacted by macroeconomic conditions resulting from the global COVID-19 pandemic.***

Since the first quarter of 2020, there has been a worldwide impact from the COVID-19 pandemic. Government regulations and shifting social behaviors have limited or closed non-essential transportation, government functions, business activities and person-to-person interactions. In some cases, the relaxation of such trends has recently been followed by actual or contemplated returns to stringent restrictions on gatherings or commerce, including in parts of the U.S. and a number of areas in Europe.

We temporarily suspended operations at each of our manufacturing facilities worldwide for a part of the first half of 2020. Some of our suppliers and partners also experienced temporary suspensions before resuming, including Panasonic, which manufactures battery cells for our products at our Gigafactory Nevada. We also instituted temporary employee furloughs and compensation reductions while our U.S. operations were scaled back. Reduced operations or closures at motor vehicle departments, vehicle auction houses and municipal and utility company inspectors have resulted in challenges in or postponements for our new vehicle deliveries, used vehicle sales and energy product deployments. Global trade conditions and consumer trends may further adversely impact us and our industries. For example, pandemic-related issues have exacerbated port congestion and intermittent supplier shutdowns and delays, resulting in additional expenses to expedite delivery of critical parts. Similarly, increased demand for personal electronics has created a shortfall of microchip supply, and it is yet unknown how we may be impacted. Sustaining our production trajectory will require the readiness and solvency of our suppliers and vendors, a stable and motivated production workforce and ongoing government cooperation, including for travel and visa allowances. The contingencies inherent in the construction of and ramp at new facilities such as Gigafactory Shanghai, Gigafactory Berlin and Gigafactory Texas may be exacerbated by these challenges.

We cannot predict the duration or direction of current global trends, the sustained impact of which is largely unknown, is rapidly evolving and has varied across geographic regions. Ultimately, we continue to monitor macroeconomic conditions to remain flexible and to optimize and evolve our business as appropriate, and we will have to accurately project demand and infrastructure requirements globally and deploy our production, workforce and other resources accordingly. If current global market conditions continue or worsen, or if we cannot or do not maintain operations at a scope that is commensurate with such conditions or are later required to or choose to suspend such operations again, our business, prospects, financial condition and operating results may be harmed.

We may experience delays in launching and ramping the production of our products and features, or we may be unable to control our manufacturing costs.

We have previously experienced and may in the future experience launch and production ramp delays for new products and features. For example, we encountered unanticipated supplier issues that led to delays during the ramp of Model X and experienced challenges with a supplier and with ramping full automation for certain of our initial Model 3 manufacturing processes. In addition, we may introduce in the future new or unique manufacturing processes and design features for our products. There is no guarantee that we will be able to successfully and timely introduce and scale such processes or features.

In particular, our future business depends in large part on increasing the production of mass-market vehicles including Model 3 and Model Y, which we are planning to achieve through multiple factories worldwide. We have relatively limited experience to date in manufacturing Model 3 and Model Y at high volumes and even less experience building and ramping vehicle production lines across multiple factories in different geographies. In order to be successful, we will need to implement, maintain and ramp efficient and cost-effective manufacturing capabilities, processes and supply chains and achieve the design tolerances, high quality and output rates we have planned at our manufacturing facilities in California, Nevada, Texas, China and Germany. We will also need to hire, train and compensate skilled employees to operate these facilities. Bottlenecks and other unexpected challenges such as those we experienced in the past may arise during our production ramps, and we must address them promptly while continuing to improve manufacturing processes and reducing costs. If we are not successful in achieving these goals, we could face delays in establishing and/or sustaining our Model 3 and Model Y ramps or be unable to meet our related cost and profitability targets.

We may also experience similar future delays in launching and/or ramping production of our energy storage products and Solar Roof; new product versions or variants; new vehicles such as Tesla Semi, Cybertruck and the new Tesla Roadster; and future features and services such as new Autopilot or FSD features and the autonomous Tesla ride-hailing network. Likewise, we may encounter delays with the design, construction and regulatory or other approvals necessary to build and bring online future manufacturing facilities and products.

Any delay or other complication in ramping the production of our current products or the development, manufacture, launch and production ramp of our future products, features and services, or in doing so cost-effectively and with high quality, may harm our brand, business, prospects, financial condition and operating results.

We may be unable to grow our global product sales, delivery and installation capabilities and our servicing and vehicle charging networks, or we may be unable to accurately project and effectively manage our growth.

Our success will depend on our ability to continue to expand our sales capabilities. We also frequently adjust our retail operations and product offerings in order to optimize our reach, costs, product line-up and model differentiation and customer experience. However, there is no guarantee that such steps will be accepted by consumers accustomed to traditional sales strategies. For example, marketing methods such as touchless test drives that we have pioneered in certain markets have not been proven at scale. We are targeting with Model 3 and Model Y a global mass demographic with a broad range of potential customers, in which we have relatively limited experience projecting demand and pricing our products. We currently produce numerous international variants at a limited number of factories, and if our specific demand expectations for these variants prove inaccurate, we may not be able to timely generate deliveries matched to the vehicles that we produce in the same timeframe or that are commensurate with the size of our operations in a given region. Likewise, as we develop and grow our energy products and services worldwide, our success will depend on our ability to correctly forecast demand in various markets.

Because we do not have independent dealer networks, we are responsible for delivering all of our vehicles to our customers. While we have improved our delivery logistics, we may face difficulties with deliveries at increasing volumes, particularly in international markets requiring significant transit times. For example, we saw challenges in ramping our logistics channels in China and Europe to initially deliver Model 3 there in the first quarter of 2019. We have deployed a number of delivery models, such as deliveries to customers' homes and workplaces and touchless deliveries, but there is no guarantee that such models will be scalable or be accepted globally. Likewise, as we ramp Solar Roof, we are working to substantially increase installation personnel and decrease installation times. If we are not successful in matching such capabilities with actual production, or if we experience unforeseen production delays or inaccurately forecast demand for the Solar Roof, our business, financial condition and operating results may be harmed.

Moreover, because of our unique expertise with our vehicles, we recommend that our vehicles be serviced by us or by certain authorized professionals. If we experience delays in adding such servicing capacity or servicing our vehicles efficiently, or experience unforeseen issues with the reliability of our vehicles, particularly higher-volume and newer additions to our fleet such as Model 3 and Model Y, it could overburden our servicing capabilities and parts inventory. Similarly, the increasing number of Tesla vehicles also requires us to continue to rapidly increase the number of our Supercharger stations and connectors throughout the world.

There is no assurance that we will be able to ramp our business to meet our sales, delivery, installation, servicing and vehicle charging targets globally, that our projections on which such targets are based will prove accurate or that the pace of growth or coverage of our customer infrastructure network will meet customer expectations. These plans require significant cash investments and management resources and there is no guarantee that they will generate additional sales or installations of our products, or that we will be able to avoid cost overruns or be able to hire additional personnel to support them. As we expand, we will also need to ensure our compliance with regulatory requirements in various jurisdictions applicable to the sale, installation and servicing of our products, the sale or dispatch of electricity related to our energy products and the operation of Superchargers. If we fail to manage our growth effectively, it may harm our brand, business, prospects, financial condition and operating results.

Our future growth and success are dependent upon consumers' demand for electric vehicles and specifically our vehicles in an automotive industry that is generally competitive, cyclical and volatile.

If the market for electric vehicles in general and Tesla vehicles in particular does not develop as we expect, develops more slowly than we expect, or if demand for our vehicles decreases in our markets or our vehicles compete with each other, our business, prospects, financial condition and operating results may be harmed.

We are still at an earlier stage and have limited resources and production relative to established competitors that offer internal combustion engine vehicles. In addition, electric vehicles still comprise a small percentage of overall vehicle sales. As a result, the market for our vehicles could be negatively affected by numerous factors, such as:

- perceptions about electric vehicle features, quality, safety, performance and cost;
- perceptions about the limited range over which electric vehicles may be driven on a single battery charge, and access to charging facilities;
- competition, including from other types of alternative fuel vehicles, plug-in hybrid electric vehicles and high fuel-economy internal combustion engine vehicles;
- volatility in the cost of oil and gasoline, such as wide fluctuations in crude oil prices during 2020;

- government regulations and economic incentives; and
- concerns about our future viability.

Finally, the target demographics for our vehicles, particularly Model 3 and Model Y, are highly competitive. Sales of vehicles in the automotive industry tend to be cyclical in many markets, which may expose us to further volatility as we expand and adjust our operations and retail strategies. Moreover, the COVID-19 pandemic may negatively impact the transportation and automotive industries long-term. It is uncertain as to how such macroeconomic factors will impact us as a company that has been experiencing growth and increasing market share in an industry that has globally been experiencing a recent decline in sales.

Our suppliers may fail to deliver components according to schedules, prices, quality and volumes that are acceptable to us, or we may be unable to manage these components effectively.

Our products contain thousands of parts that we purchase globally from hundreds of mostly single-source direct suppliers, generally without long-term supply agreements. This exposes us to multiple potential sources of component shortages, such as those that we experienced in 2012 and 2016 with our Model S and Model X ramps. Unexpected changes in business conditions, materials pricing, labor issues, wars, governmental changes, tariffs, natural disasters such as the March 2011 earthquakes in Japan, health epidemics such as the global COVID-19 pandemic, trade and shipping disruptions and other factors beyond our or our suppliers' control could also affect these suppliers' ability to deliver components to us or to remain solvent and operational. For example, a global shortage of microchips has been reported since early 2021, and the impact to us is yet unknown. The unavailability of any component or supplier could result in production delays, idle manufacturing facilities, product design changes and loss of access to important technology and tools for producing and supporting our products. Moreover, significant increases in our production, such as for Model 3 and Model Y, or product design changes by us have required and may in the future require us to procure additional components in a short amount of time. Our suppliers may not be willing or able to sustainably meet our timelines or our cost, quality and volume needs, or to do so may cost us more, which may require us to replace them with other sources. Finally, we have limited vehicle manufacturing experience outside of the Fremont Factory and we may experience issues increasing the level of localized procurement at our Gigafactory Shanghai and at future factories such as Gigafactory Berlin and Gigafactory Texas. While we believe that we will be able to secure additional or alternate sources or develop our own replacements for most of our components, there is no assurance that we will be able to do so quickly or at all. Additionally, we may be unsuccessful in our continuous efforts to negotiate with existing suppliers to obtain cost reductions and avoid unfavorable changes to terms, source less expensive suppliers for certain parts and redesign certain parts to make them less expensive to produce. Any of these occurrences may harm our business, prospects, financial condition and operating results.

As the scale of our vehicle production increases, we will also need to accurately forecast, purchase, warehouse and transport components at high volumes to our manufacturing facilities and servicing locations internationally. If we are unable to accurately match the timing and quantities of component purchases to our actual needs or successfully implement automation, inventory management and other systems to accommodate the increased complexity in our supply chain and parts management, we may incur unexpected production disruption, storage, transportation and write-off costs, which may harm our business and operating results.

We may be unable to meet our projected construction timelines, costs and production ramps at new factories, or we may experience difficulties in generating and maintaining demand for products manufactured there.

Our ability to increase production of our vehicles on a sustained basis, make them affordable globally by accessing local supply chains and workforces and streamline delivery logistics is dependent on the construction and ramp of Gigafactory Shanghai, Gigafactory Berlin and Gigafactory Texas. The construction of and commencement and ramp of production at these factories are subject to a number of uncertainties inherent in all new manufacturing operations, including ongoing compliance with regulatory requirements, procurement and maintenance of construction, environmental and operational licenses and approvals for additional expansion, potential supply chain constraints, hiring, training and retention of qualified employees and the pace of bringing production equipment and processes online with the capability to manufacture high-quality units at scale. For example, we are currently constructing Gigafactory Berlin under conditional permits. Moreover, we intend to incorporate sequential design and manufacturing changes into vehicles manufactured at each new factory. We have limited experience to date with developing and implementing vehicle manufacturing innovations outside of the Fremont Factory, as we only recently began production at Gigafactory Shanghai. In particular, the majority of our design and engineering resources are currently located in California. In order to meet our expectations for our new factories, we must expand and manage localized design and engineering talent and resources. If we experience any issues or delays in meeting our projected timelines, costs, capital efficiency and production capacity for our new factories, expanding and managing teams to implement iterative design and production changes there, maintaining and complying with the terms of any debt financing that we obtain to fund them or generating and maintaining demand for the vehicles we manufacture there, our business, prospects, operating results and financial condition may be harmed.

We will need to maintain and significantly grow our access to battery cells, including through the development and manufacture of our own cells, and control our related costs.

We are dependent on the continued supply of lithium-ion battery cells for our vehicles and energy storage products, and we will require substantially more cells to grow our business according to our plans. Currently, we rely on suppliers such as Panasonic for these cells. However, we have to date fully qualified only a very limited number of such suppliers and have limited flexibility in changing suppliers. Any disruption in the supply of battery cells from our suppliers could limit production of our vehicles and energy storage products. In the long term, we intend to supplement cells from our suppliers with cells manufactured by us, which we believe will be more efficient, manufacturable at greater volumes and cost-effective than currently available cells. However, our efforts to develop and manufacture such battery cells have required and may require significant investments, and there can be no assurance that we will be able to achieve these targets in the timeframes that we have planned or at all. If we are unable to do so, we may have to curtail our planned vehicle and energy storage product production or procure additional cells from suppliers at potentially greater costs, either of which may harm our business and operating results.

In addition, the cost of battery cells, whether manufactured by our suppliers or by us, 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, including as a result of increased global production of electric vehicles and energy storage products. Any reduced availability of these materials may impact our access to cells and any increases in their prices may reduce our profitability if we cannot recoup the increased costs through increased vehicle prices. Moreover, any such attempts to increase product prices may harm our brand, prospects and operating results.

We face strong competition for our products and services from a growing list of established and new competitors.

The worldwide automotive market is highly competitive today and we expect it will become even more so in the future. For example, Model 3 and Model Y face competition from existing and future automobile manufacturers in the extremely competitive entry-level premium sedan and compact SUV markets. A significant and growing number of established and new automobile manufacturers, as well as other companies, have entered or are reported to have plans to enter the market for electric and other alternative fuel vehicles, including hybrid, plug-in hybrid and fully electric vehicles, as well as the market for self-driving technology and other vehicle applications and software platforms. In some cases, our competitors offer or will offer electric vehicles in important markets such as China and Europe, and/or have announced an intention to produce electric vehicles exclusively at some point in the future. Many of our competitors have significantly greater or better-established resources than we do to devote to the design, development, manufacturing, distribution, promotion, sale and support of their products. Increased competition could result in our lower vehicle unit sales, price reductions, revenue shortfalls, loss of customers and loss of market share, which may harm our business, financial condition and operating results.

We also face competition in our energy generation and storage business from other manufacturers, developers, installers and service providers of competing energy systems, as well as from large utilities. Decreases in the retail or wholesale prices of electricity from utilities or other renewable energy sources could make our products less attractive to customers and lead to an increased rate of residential customer defaults under our existing long-term leases and PPAs.

Risks Related to Our Operations

We may experience issues with lithium-ion cells or other components manufactured at Gigafactory Nevada, which may harm the production and profitability of our vehicle and energy storage products.

Our plan to grow the volume and profitability of our vehicles and energy storage products depends on significant lithium-ion battery cell production by our partner Panasonic at Gigafactory Nevada. Although Panasonic has a long track record of producing high-quality cells at significant volume at its factories in Japan, it has relatively limited experience with cell production at Gigafactory Nevada, which began in 2017. Moreover, although Panasonic is co-located with us at Gigafactory Nevada, it is free to make its own operational decisions, such as its determination to temporarily suspend its manufacturing there in response to the COVID-19 pandemic. In addition, we produce several vehicle components, such as battery modules and packs incorporating the cells produced by Panasonic for Model 3 and Model Y and drive units (including to support Gigafactory Shanghai production), at Gigafactory Nevada, and we also manufacture energy storage products there. In the past, some of the manufacturing lines for certain product components took longer than anticipated to ramp to their full capacity, and additional bottlenecks may arise in the future as we continue to increase the production rate and introduce new lines. If we or Panasonic are unable to or otherwise do not maintain and grow our respective operations at Gigafactory Nevada production, or if we are unable to do so cost-effectively or hire and retain highly-skilled personnel there, our ability to manufacture our products profitably would be limited, which may harm our business and operating results.

Finally, the high volumes of lithium-ion cells and battery modules and packs manufactured at Gigafactory Nevada are stored and recycled at our various facilities. Any mishandling of battery cells may cause disruption to the operation of such facilities. While

we have implemented safety procedures related to the handling of the cells, there can be no assurance that a safety issue or fire related to the cells would not disrupt our operations. Any such disruptions or issues may harm our brand and business.

We face risks associated with maintaining and expanding our international operations, including unfavorable and uncertain regulatory, political, economic, tax and labor conditions.

We are subject to legal and regulatory requirements, political uncertainty and social, environmental and economic conditions in numerous jurisdictions, over which we have little control and which are inherently unpredictable. Our operations in such jurisdictions, particularly as a company based in the U.S., create risks relating to conforming our products to regulatory and safety requirements and charging and other electric infrastructures; organizing local operating entities; establishing, staffing and managing foreign business locations; attracting local customers; navigating foreign government taxes, regulations and permit requirements; enforceability of our contractual rights; trade restrictions, customs regulations, tariffs and price or exchange controls; and preferences in foreign nations for domestically manufactured products. Such conditions may increase our costs, impact our ability to sell our products and require significant management attention, and may harm our business if we unable to manage them effectively.

Our business may suffer if our products or features contain defects, fail to perform as expected or take longer than expected to become fully functional.

If our products contain design or manufacturing defects that cause them not to perform as expected or that require repair, or certain features of our vehicles such as new Autopilot or FSD features take longer than expected to become enabled, are legally restricted or become subject to onerous regulation, our ability to develop, market and sell our products and services may be harmed, and we may experience delivery delays, product recalls, product liability, breach of warranty and consumer protection claims and significant warranty and other expenses. In particular, our products are highly dependent on software, which is inherently complex and may contain latent defects or errors or be subject to external attacks. Issues experienced by our customers have included those related to the Model S and Model X 17-inch display screen, the panoramic roof and the 12-volt battery in the Model S, the seats and doors in the Model X and the operation of solar panels installed by us. Although we attempt to remedy any issues we observe in our products as effectively and rapidly as possible, such efforts may not be timely, may hamper production or may not completely satisfy our customers. While we have performed extensive internal testing on our products and features, we currently have a limited frame of reference by which to evaluate their long-term quality, reliability, durability and performance characteristics. There can be no assurance that we will be able to detect and fix any defects in our products prior to their sale to or installation for customers.

We may be required to defend or insure against product liability claims.

The automobile industry generally experiences significant product liability claims, and as such we face the risk of such claims in the event our vehicles do not perform or are claimed to not have performed as expected. As is true for other automakers, our vehicles have been involved and we expect in the future will be involved in accidents resulting in death or personal injury, and such accidents where Autopilot or FSD features are engaged are the subject of significant public attention. We have experienced and we expect to continue to face claims arising from or related to misuse or claimed failures of such new technologies that we are pioneering. In addition, the battery packs that we produce make use of lithium-ion cells. On rare occasions, lithium-ion cells can rapidly release the energy they contain by venting smoke and flames in a manner that can ignite nearby materials as well as other lithium-ion cells. While we have designed our battery packs to passively contain any single cell's release of energy without spreading to neighboring cells, there can be no assurance that a field or testing failure of our vehicles or other battery packs that we produce will not occur, in particular due to a high-speed crash. Likewise, as our solar energy systems and energy storage products generate and store electricity, they have the potential to fail or cause injury to people or property. Any product liability claim may subject us to lawsuits and substantial monetary damages, product recalls or redesign efforts, and even a meritless claim may require us to defend it, all of which may generate negative publicity and be expensive and time-consuming. In most jurisdictions, we generally self-insure against the risk of product liability claims for vehicle exposure, meaning that any product liability claims will likely have to be paid from company funds and not by insurance.

We will need to maintain public credibility and confidence in our long-term business prospects in order to succeed.

In order to maintain and grow our business, we must maintain credibility and confidence among customers, suppliers, analysts, investors, ratings agencies and other parties in our long-term financial viability and business prospects. Maintaining such confidence may be challenging due to our limited operating history relative to established competitors; customer unfamiliarity with our products; any delays we may experience in scaling manufacturing, delivery and service operations to meet demand; competition and uncertainty regarding the future of electric vehicles or our other products and services; our quarterly production and sales performance compared with market expectations; and other factors including those over which we have no control. In particular, Tesla's products, business, results of operations, statements and actions are well-publicized by a range of third parties. Such attention includes frequent criticism, which is often exaggerated or unfounded, such as speculation regarding the sufficiency or stability of our management team. Any such negative perceptions, whether caused by us or not, may harm our business and make it more difficult to raise additional funds if needed.

We may be unable to effectively grow, or manage the compliance, residual value, financing and credit risks related to, our various financing programs.

We offer financing arrangements for our vehicles in North America, Europe and Asia primarily through various financial institutions. We also currently offer vehicle financing arrangements directly through our local subsidiaries in certain markets. Depending on the country, such arrangements are available for specified models and may include operating leases directly with us under which we typically receive only a very small portion of the total vehicle purchase price at the time of lease, followed by a stream of payments over the term of the lease. We have also offered various arrangements for customers of our solar energy systems whereby they pay us a fixed payment to lease or finance the purchase of such systems or purchase electricity generated by them. If we do not successfully monitor and comply with applicable national, state and/or local financial regulations and consumer protection laws governing these transactions, we may become subject to enforcement actions or penalties.

The profitability of any directly-leased vehicles returned to us at the end of their leases depends on our ability to accurately project our vehicles' residual values at the outset of the leases, and such values may fluctuate prior to the end of their terms depending on various factors such as supply and demand of our used vehicles, economic cycles and the pricing of new vehicles. We have made in the past and may make in the future certain adjustments to our prices from time to time in the ordinary course of business, which may impact the residual values of our vehicles and reduce the profitability of our vehicle leasing program. The funding and growth of this program also relies on our ability to secure adequate financing and/or business partners. If we are unable to adequately fund our leasing program through internal funds, partners or other financing sources, and compelling alternative financing programs are not available for our customers who may expect or need such options, we may be unable to grow our vehicle deliveries. Furthermore, if our vehicle leasing business grows substantially, our business may suffer if we cannot effectively manage the resulting greater levels of residual risk.

Similarly, we have provided resale value guarantees to vehicle customers and partners for certain financing programs, under which such counterparties may sell their vehicles back to us at certain points in time at pre-determined amounts. However, actual resale values are subject to fluctuations over the term of the financing arrangements, such as from the vehicle pricing changes discussed above. If the actual resale values of any vehicles resold or returned to us pursuant to these programs are materially lower than the pre-determined amounts we have offered, our financial condition and operating results may be harmed.

Finally, our vehicle and solar energy system financing programs and our energy storage sales programs also expose us to customer credit risk. In the event of a widespread economic downturn or other catastrophic event, our customers may be unable or unwilling to satisfy their payment obligations to us on a timely basis or at all. If a significant number of our customers default, we may incur substantial credit losses and/or impairment charges with respect to the underlying assets.

We must manage ongoing obligations under our agreement with the Research Foundation for the State University of New York relating to our Gigafactory New York.

We are party to an operating lease and a research and development agreement through the SUNY Foundation. These agreements provide for the construction and use of our Gigafactory New York, which we have primarily used for the development and production of our Solar Roof and other solar products and components, energy storage components and Supercharger components, and for other lessor-approved functions. Under this agreement, we are obligated to, among other things, meet employment targets as well as specified minimum numbers of personnel in the State of New York and in Buffalo, New York and spend or incur \$5.00 billion in combined capital, operational expenses, costs of goods sold and other costs in the State of New York during the 10-year period beginning April 30, 2018. As we temporarily suspended most of our manufacturing operations at Gigafactory New York pursuant to a New York State executive order issued in March 2020 as a result of the COVID-19 pandemic, we were granted a one-year deferral of our obligation to be compliant with our applicable targets under such agreement on April 30, 2020, which was memorialized in an amendment to our agreement with the SUNY Foundation in July 2020. While we expect to have and grow significant operations at Gigafactory New York and the surrounding Buffalo area, any failure by us in any year over the course of the term of the agreement to meet all applicable future obligations may result in our obligation to pay a "program payment" of \$41 million to the SUNY Foundation for such year, the termination of our lease at Gigafactory New York which may require us to pay additional penalties and/or the need to adjust certain of our operations, in particular our production ramp of the Solar Roof or other components. Any of the foregoing events may harm our business, financial condition and operating results.

If we are unable to attract, hire and retain key employees and qualified personnel, our ability to compete may be harmed.

The loss of the services of any of our key employees or any significant portion of our workforce could disrupt our operations or delay the development, introduction and ramp of our products and services. In particular, we are highly dependent on the services of Elon Musk, our Chief Executive Officer. None of our key employees is bound by an employment agreement for any specific term and we may not be able to successfully attract and retain senior leadership necessary to grow our business. Our future success also depends upon our ability to attract, hire and retain a large number of engineering, manufacturing, marketing, sales and delivery, service, installation, technology and support personnel, especially to support our planned high-volume product sales, market and geographical

expansion and technological innovations. Recruiting efforts, particularly for senior employees, may be time-consuming, which may delay the execution of our plans. If we are not successful in managing these risks, our business, financial condition and operating results may be harmed.

Employees may leave Tesla or choose other employers over Tesla due to various factors, such as a very competitive labor market for talented individuals with automotive or technology experience, or any negative publicity related to us. In California, Nevada and other regions where we have operations, there is increasing competition for individuals with skillsets needed for our business, including specialized knowledge of electric vehicles, software engineering, manufacturing engineering and electrical and building construction expertise. Moreover, we may be impacted by perceptions relating to reductions in force that we have conducted in the past in order to optimize our organizational structure and reduce costs and the departure of certain senior personnel for various reasons. Likewise, as a result of our temporary suspension of various U.S. manufacturing operations in the first half of 2020, in April 2020 we temporarily furloughed certain hourly employees and reduced most salaried employees' base salaries. We also compete with both mature and prosperous companies that have far greater financial resources than we do and start-ups and emerging companies that promise short-term growth opportunities.

Finally, our compensation philosophy for all of our personnel reflects our startup origins, with an emphasis on equity-based awards and benefits in order to closely align their incentives with the long-term interests of our stockholders. We periodically seek and obtain approval from our stockholders for future increases to the number of awards available under our equity incentive and employee stock purchase plans. If we are unable to obtain the requisite stockholder approvals for such future increases, we may have to expend additional cash to compensate our employees and our ability to retain and hire qualified personnel may be harmed.

We are highly dependent on the services of Elon Musk, our Chief Executive Officer.

We are highly dependent on the services of Elon Musk, our Chief Executive Officer and largest stockholder. Although Mr. Musk spends significant time with Tesla and is highly active in our management, he does not devote his full time and attention to Tesla. Mr. Musk also currently serves as Chief Executive Officer and Chief Technical Officer of Space Exploration Technologies Corp., a developer and manufacturer of space launch vehicles, and is involved in other emerging technology ventures.

We must manage risks relating to our information technology systems and the threat of intellectual property theft, data breaches and cyber-attacks.

We must continue to expand and improve our information technology systems as our operations grow, such as product data management, procurement, inventory management, production planning and execution, sales, service and logistics, dealer management, financial, tax and regulatory compliance systems. This includes the implementation of new internally developed systems and the deployment of such systems in the U.S. and abroad. We must also continue to maintain information technology measures designed to protect us against intellectual property theft, data breaches, sabotage and other external or internal cyber-attacks or misappropriation. However, the implementation, maintenance, segregation and improvement of these systems require significant management time, support and cost, and there are inherent risks associated with developing, improving and expanding our core systems as well as implementing new systems and updating current systems, including disruptions to the related areas of business operation. These risks may affect our ability to manage our data and inventory, procure parts or supplies or manufacture, sell, deliver and service products, adequately protect our intellectual property or achieve and maintain compliance with, or realize available benefits under, tax laws and other applicable regulations.

Moreover, if we do not successfully implement, maintain or expand these systems as planned, our operations may be disrupted, our ability to accurately and/or timely report our financial results could be impaired and deficiencies may arise in our internal control over financial reporting, which may impact our ability to certify our financial results. Moreover, our proprietary information or intellectual property could be compromised or misappropriated and our reputation may be adversely affected. If these systems or their functionality do not operate as we expect them to, we may be required to expend significant resources to make corrections or find alternative sources for performing these functions.

Any unauthorized control or manipulation of our products' systems could result in loss of confidence in us and our products.

Our products contain complex information technology systems. For example, our vehicles and energy storage products are designed with built-in data connectivity to accept and install periodic remote updates from us to improve or update their functionality. While we have implemented security measures intended to prevent unauthorized access to our information technology networks, our products and their systems, malicious entities have reportedly attempted, and may attempt in the future, to gain unauthorized access to modify, alter and use such networks, products and systems to gain control of, or to change, our products' functionality, user interface and performance characteristics or to gain access to data stored in or generated by our products. We encourage reporting of potential vulnerabilities in the security of our products through our security vulnerability reporting policy, and we aim to remedy any reported and verified vulnerability. However, there can be no assurance that any vulnerabilities will not be exploited before they can be identified, or that our remediation efforts are or will be successful.

Any unauthorized access to or control of our products or their systems or any loss of data could result in legal claims or government investigations. In addition, regardless of their veracity, reports of unauthorized access to our products, their systems or data, as well as other factors that may result in the perception that our products, their systems or data are capable of being hacked, may harm our brand, prospects and operating results. We have been the subject of such reports in the past.

Our business may be adversely affected by any disruptions caused by union activities.

It is not uncommon for employees of certain trades at companies such as us to belong to a union, which can result in higher employee costs and increased risk of work stoppages. Moreover, regulations in some jurisdictions outside of the U.S. mandate employee participation in industrial collective bargaining agreements and work councils with certain consultation rights with respect to the relevant companies' operations. Although we work diligently to provide the best possible work environment for our employees, they may still decide to join or seek recognition to form a labor union, or we may be required to become a union signatory. From time to time, labor unions have engaged in campaigns to organize certain of our operations, as part of which such unions have filed unfair labor practice charges against us with the National Labor Relations Board, and they may do so in the future. In September 2019, an administrative law judge issued a recommended decision for Tesla on certain issues and against us on certain others. The National Labor Relations Board has not yet adopted the recommendation and we have appealed certain aspects of the recommended decision. Any unfavorable ultimate outcome for Tesla may have a negative impact on the perception of Tesla's treatment of our employees. Furthermore, we are directly or indirectly dependent upon companies with unionized work forces, such as suppliers and trucking and freight companies. Any work stoppages or strikes organized by such unions could delay the manufacture and sale of our products and may harm our business and operating results.

We may choose to or be compelled to undertake product recalls or take other similar actions.

As a manufacturing company, we must manage the risk of product recalls with respect to our products. Recalls for our vehicles have resulted from, for example, industry-wide issues with airbags from a particular supplier, concerns of corrosion in Model S and Model X power steering assist motor bolts, certain suspension failures in Model S and Model X and issues with Model S and Model X media control units. In addition to recalls initiated by us for various causes, testing of or investigations into our products by government regulators or industry groups may compel us to initiate product recalls or may result in negative public perceptions about the safety of our products, even if we disagree with the defect determination or have data that shows the actual safety risk to be non-existent. In the future, we may voluntarily or involuntarily initiate recalls if any of our products are determined by us or a regulator to contain a safety defect or be noncompliant with applicable laws and regulations, such as U.S. federal motor vehicle safety standards. Such recalls, whether voluntary or involuntary or caused by systems or components engineered or manufactured by us or our suppliers, could result in significant expense, supply chain complications and service burdens, and may harm our brand, business, prospects, financial condition and operating results.

Our current and future warranty reserves may be insufficient to cover future warranty claims.

We provide a manufacturer's warranty on all new and used Tesla vehicles we sell. We also provide certain warranties with respect to the energy generation and storage systems we sell, including on their installation and maintenance, and for components not manufactured by us, we generally pass through to our customers the applicable manufacturers' warranties. As part of our energy generation and storage system contracts, we may provide the customer with performance guarantees that warrant that the underlying system will meet or exceed the minimum energy generation or other energy performance requirements specified in the contract. Under these performance guarantees, we bear the risk of electricity production or other performance shortfalls, even if they result from failures in components from third party manufacturers. These risks are exacerbated in the event such manufacturers cease operations or fail to honor their warranties.

If our warranty reserves are inadequate to cover future warranty claims on our products, our financial condition and operating results may be harmed. Warranty reserves include our management's best estimates of the projected costs to repair or to replace items under warranty, which are based on actual claims incurred to date and an estimate of the nature, frequency and costs of future claims. Such estimates are inherently uncertain and changes to our historical or projected experience, especially with respect to products such as Model 3, Model Y and Solar Roof that we have recently introduced and/or that we expect to produce at significantly greater volumes than our past products, may cause material changes to our warranty reserves in the future.

Our insurance coverage strategy may not be adequate to protect us from all business risks.

We may be subject, in the ordinary course of business, to losses resulting from products liability, accidents, acts of God and other claims against us, for which we may have no insurance coverage. As a general matter, we do not maintain as much insurance coverage as many other companies do, and in some cases, we do not maintain any at all. Additionally, the policies that we do have may include significant deductibles or self-insured retentions, policy limitations and exclusions, and we cannot be certain that our insurance coverage will be sufficient to cover all future losses or claims against us. A loss that is uninsured or which exceeds policy limits may require us to pay substantial amounts, which may harm our financial condition and operating results.

There is no guarantee that we will have sufficient cash flow from our business to pay our substantial indebtedness or that we will not incur additional indebtedness.

As of December 31, 2020, we and our subsidiaries had outstanding \$10.57 billion in aggregate principal amount of indebtedness (see Note 12, *Debt*, to the consolidated financial statements included elsewhere in this Annual Report on Form 10-K). Our substantial consolidated indebtedness may increase our vulnerability to any generally adverse economic and industry conditions. We and our subsidiaries may, subject to the limitations in the terms of our existing and future indebtedness, incur additional debt, secure existing or future debt or recapitalize our debt.

Holders of convertible senior notes issued by us or our subsidiary may convert such notes at their option prior to the scheduled maturities of the respective convertible senior notes under certain circumstances pursuant to the terms of such notes. Upon conversion of the applicable convertible senior notes, we will be obligated to deliver cash and/or shares pursuant to the terms of such notes. For example, as our stock price has significantly increased recently, we have seen higher levels of early conversions of such “in-the-money” convertible senior notes. Moreover, holders of such convertible senior notes may have the right to require us to repurchase their notes upon the occurrence of a fundamental change pursuant to the terms of such notes.

Our ability to make scheduled payments of the principal and interest on our indebtedness when due, to make payments upon conversion or repurchase demands with respect to our convertible senior notes or to refinance our indebtedness as we may need or desire, 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 satisfy our obligations under our existing indebtedness and any future indebtedness we may incur, and to make necessary capital expenditures. If we are unable to generate such cash flow, we may be required to adopt one or more alternatives, such as reducing or delaying investments or capital expenditures, selling assets, refinancing or obtaining additional equity capital on terms that may be onerous or highly dilutive. Our ability to refinance existing or future indebtedness will depend on the capital markets and our financial condition at such time. In addition, our ability to make payments may be limited by law, by regulatory authority or by agreements governing our future indebtedness. We may not be able to engage in these activities on desirable terms or at all, which may result in a default on our existing or future indebtedness and harm our financial condition and operating results.

Our debt agreements contain covenant restrictions that may limit our ability to operate our business.

The terms of certain of our credit facilities, including our senior asset-based revolving credit agreement, contain, and any of our other future debt agreements may contain, covenant restrictions that limit our ability to operate our business, including restrictions on our ability to, among other things, incur additional debt or issue guarantees, create liens, repurchase stock, or make other restricted payments, and make certain voluntary prepayments of specified debt. In addition, under certain circumstances we are required to comply with a fixed charge coverage ratio. As a result of these covenants, our ability to respond to changes in business and economic conditions and engage in beneficial transactions, including to obtain additional financing as needed, may be restricted. Furthermore, our failure to comply with our debt covenants could result in a default under our debt agreements, which could permit the holders to accelerate our obligation to repay the debt. If any of our debt is accelerated, we may not have sufficient funds available to repay it.

Additional funds may not be available to us when we need or want them.

Our business and our future plans for expansion are capital-intensive, and the specific timing of cash inflows and outflows may fluctuate substantially from period to period. We may need or want to raise additional funds through the issuance of equity, equity-related or debt securities or through obtaining credit from financial institutions to fund, together with our principal sources of liquidity, the costs of developing and manufacturing our current or future products, to pay any significant unplanned or accelerated expenses or for new significant strategic investments, or to refinance our significant consolidated indebtedness, even if not required to do so by the terms of such indebtedness. We cannot be certain that additional funds will be available to us on favorable terms when required, or at all. If we cannot raise additional funds when we need them, our financial condition, results of operations, business and prospects could be materially and adversely affected.

We may be negatively impacted by any early obsolescence of our manufacturing equipment.

We depreciate the cost of our manufacturing equipment over their expected useful lives. However, product cycles or manufacturing technology may change periodically, and we may decide to update our products or manufacturing processes more quickly than expected. Moreover, improvements in engineering and manufacturing expertise and efficiency may result in our ability to manufacture our products using less of our currently installed equipment. Alternatively, as we ramp and mature the production of our products to higher levels, we may discontinue the use of already installed equipment in favor of different or additional equipment. The useful life of any equipment that would be retired early as a result would be shortened, causing the depreciation on such equipment to be accelerated, and our results of operations may be harmed.

We hold and may acquire digital assets that may be subject to volatile market prices, impairment and unique risks of loss.

In January 2021, we updated our investment policy to provide us with more flexibility to further diversify and maximize returns on our cash that is not required to maintain adequate operating liquidity. As part of the policy, which was duly approved by the Audit Committee of our Board of Directors, we may invest a portion of such cash in certain alternative reserve assets including digital assets, gold bullion, gold exchange-traded funds and other assets as specified in the future. Thereafter, we invested an aggregate \$1.50 billion in bitcoin under this policy and may acquire and hold digital assets from time to time or long-term. Moreover, we expect to begin accepting bitcoin as a form of payment for our products in the near future, subject to applicable laws and initially on a limited basis, which we may or may not liquidate upon receipt.

The prices of digital assets have been in the past and may continue to be highly volatile, including as a result of various associated risks and uncertainties. For example, the prevalence of such assets is a relatively recent trend, and their long-term adoption by investors, consumers and businesses is unpredictable. Moreover, their lack of a physical form, their reliance on technology for their creation, existence and transactional validation and their decentralization may subject their integrity to the threat of malicious attacks and technological obsolescence. Finally, the extent to which securities laws or other regulations apply or may apply in the future to such assets is unclear and may change in the future. If we hold digital assets and their values decrease relative to our purchase prices, our financial condition may be harmed.

Moreover, digital assets are currently considered indefinite-lived intangible assets under applicable accounting rules, meaning that any decrease in their fair values below our carrying values for such assets at any time subsequent to their acquisition will require us to recognize impairment charges, whereas we may make no upward revisions for any market price increases until a sale, which may adversely affect our operating results in any period in which such impairment occurs. Moreover, there is no guarantee that future changes in GAAP will not require us to change the way we account for digital assets held by us.

Finally, as intangible assets without centralized issuers or governing bodies, digital assets have been, and may in the future be, subject to security breaches, cyberattacks or other malicious activities, as well as human errors or computer malfunctions that may result in the loss or destruction of private keys needed to access such assets. While we intend to take all reasonable measures to secure any digital assets, if such threats are realized or the measures or controls we create or implement to secure our digital assets fail, it could result in a partial or total misappropriation or loss of our digital assets, and our financial condition and operating results may be harmed.

We are exposed to fluctuations in currency exchange rates.

We transact business globally in multiple currencies and have foreign currency risks related to our revenue, costs of revenue, operating expenses and localized subsidiary debt denominated in currencies other than the U.S. dollar, currently primarily the Chinese yuan, euro, Canadian dollar and British pound. To the extent we have significant revenues denominated in such foreign currencies, any strengthening of the U.S. dollar would tend to reduce our revenues as measured in U.S. dollars, as we have historically experienced. In addition, a portion of our costs and expenses have been, and we anticipate will continue to be, denominated in foreign currencies, including the Chinese yuan and Japanese yen. If we do not have fully offsetting revenues in these currencies and if the value of the U.S. dollar depreciates significantly against these currencies, our costs as measured in U.S. dollars as a percent of our revenues will correspondingly increase and our margins will suffer. Moreover, while we undertake limited hedging activities intended to offset the impact of currency translation exposure, it is impossible to predict or eliminate such impact. As a result, our operating results may be harmed.

We may need to defend ourselves against intellectual property infringement claims, which may be time-consuming and expensive.

Our competitors or other third parties may hold or obtain patents, copyrights, trademarks or other proprietary rights that could prevent, limit or interfere with our ability to make, use, develop, sell or market our products and services, which could make it more difficult for us to operate our business. From time to time, the holders of such intellectual property rights may assert their rights and urge us to take licenses and/or may bring suits alleging infringement or misappropriation of such rights, which could result in substantial costs, negative publicity and management attention, regardless of merit. While we endeavor to obtain and protect the intellectual property rights that we expect will allow us to retain or advance our strategic initiatives, there can be no assurance that we will be able to adequately identify and protect the portions of intellectual property that are strategic to our business, or mitigate the risk of potential suits or other legal demands by our competitors. Accordingly, we may consider the entering into licensing agreements with respect to such rights, although no assurance can be given that such licenses can be obtained on acceptable terms or that litigation will not occur, and such licenses and associated litigation could significantly increase our operating expenses. In addition, if we are determined to have or believe there is a high likelihood that we have infringed upon a third party's intellectual property rights, we may be required to cease making, selling or incorporating certain components or intellectual property into the goods and services we offer, to pay substantial damages and/or license royalties, to redesign our products and services and/or to establish and maintain alternative

branding for our products and services. In the event that we are required to take one or more such actions, our brand, business, financial condition and operating results may be harmed.

Our operations could be adversely affected by events outside of our control, such as natural disasters, wars or health epidemics.

We may be impacted by natural disasters, wars, health epidemics or other events outside of our control. For example, our corporate headquarters, the Fremont Factory and Gigafactory Nevada are located in seismically active regions in Northern California and Nevada, and our Gigafactory Shanghai is located in a flood-prone area. If major disasters such as earthquakes, floods or other events occur, or our information system or communications network breaks down or operates improperly, our headquarters and production facilities may be seriously damaged, or we may have to stop or delay production and shipment of our products. In addition, the global COVID-19 pandemic has impacted economic markets, manufacturing operations, supply chains, employment and consumer behavior in nearly every geographic region and industry across the world, and we have been, and may in the future be, adversely affected as a result. We may incur expenses or delays relating to such events outside of our control, which could have a material adverse impact on our business, operating results and financial condition.

Risks Related to Government Laws and Regulations

Demand for our products and services may be impacted by the status of government and economic incentives supporting the development and adoption of such products.

Government and economic incentives that support the development and adoption of electric vehicles in the U.S. and abroad, including certain tax exemptions, tax credits and rebates, may be reduced, eliminated or exhausted from time to time. For example, a \$7,500 federal tax credit that was available in the U.S. for the purchase of our vehicles was reduced in phases during and ultimately ended in 2019. We believe that this sequential phase-out likely pulled forward some vehicle demand into the periods preceding each reduction. Moreover, previously available incentives favoring electric vehicles in areas including Ontario, Canada, Germany, Hong Kong, Denmark and California have expired or were cancelled or temporarily unavailable, and in some cases were not eventually replaced or reinstituted, which may have negatively impacted sales. Any similar developments could have some negative impact on demand for our vehicles, and we and our customers may have to adjust to them.

In addition, certain governmental rebates, tax credits and other financial incentives that are currently available with respect to our solar and energy storage product businesses allow us to lower our costs and encourage customers to buy our products and investors to invest in our solar financing funds. However, these incentives may expire when the allocated funding is exhausted, reduced or terminated as renewable energy adoption rates increase, sometimes without warning. For example, the U.S. federal government currently offers certain tax credits for the installation of solar power facilities and energy storage systems that are charged from a co-sited solar power facility; however, these tax credits are currently scheduled to decline and/or expire in 2023 and beyond. Likewise, in jurisdictions where net metering is currently available, our customers receive bill credits from utilities for energy that their solar energy systems generate and export to the grid in excess of the electric load they use. The benefit available under net metering has been or has been proposed to be reduced, altered or eliminated in several jurisdictions, and has also been contested and may continue to be contested before the FERC. Any reductions or terminations of such incentives may harm our business, prospects, financial condition and operating results by making our products less competitive for potential customers, increasing our cost of capital and adversely impacting our ability to attract investment partners and to form new financing funds for our solar and energy storage assets.

Finally, we and our fund investors claim these U.S. federal tax credits and certain state incentives in amounts based on independently appraised fair market values of our solar and energy storage systems. Nevertheless, the relevant governmental authorities have audited such values and in certain cases have determined that these values should be lower, and they may do so again in the future. Such determinations may result in adverse tax consequences and/or our obligation to make indemnification or other payments to our funds or fund investors.

We are subject to evolving laws and regulations that could impose substantial costs, legal prohibitions or unfavorable changes upon our operations or products.

As we grow our manufacturing operations in additional regions, we are or will be subject to complex environmental, manufacturing, health and safety laws and regulations at numerous jurisdictional levels in the U.S., China, Germany and other locations abroad, including laws relating to the use, handling, storage, recycling, disposal and/or human exposure to hazardous materials, product material inputs and post-consumer products and with respect to constructing, expanding and maintaining our facilities. The costs of compliance, including remediations of any discovered issues and any changes to our operations mandated by new or amended laws, may be significant, and any failures to comply could result in significant expenses, delays or fines. We are also subject to laws and regulations applicable to the supply, manufacture, import, sale and service of automobiles both domestically and abroad. For example, in countries outside of the U.S., we are required to meet standards relating to vehicle safety, fuel economy and

emissions that are often materially different from requirements in the U.S., thus resulting in additional investment into the vehicles and systems to ensure regulatory compliance in those countries. This process may include official review and certification of our vehicles by foreign regulatory agencies prior to market entry, as well as compliance with foreign reporting and recall management systems requirements.

In particular, we offer in our vehicles Autopilot and FSD features that today assist drivers with certain tedious and potentially dangerous aspects of road travel, but which currently require drivers to remain fully engaged in the driving operation. We are continuing to develop our FSD technology with the goal of achieving full self-driving capability in the future. There are a variety of international, federal and state regulations that may apply to self-driving vehicles, which include many existing vehicle standards that were not originally intended to apply to vehicles that may not have a driver. Such regulations continue to rapidly change, which increases the likelihood of a patchwork of complex or conflicting regulations, or may delay products or restrict self-driving features and availability, which could adversely affect our business.

Finally, as a manufacturer, installer and service provider with respect to solar generation and energy storage systems and a supplier of electricity generated and stored by the solar energy and energy storage systems we install for customers, we are impacted by federal, state and local regulations and policies concerning electricity pricing, the interconnection of electricity generation and storage equipment with the electric grid and the sale of electricity generated by third party-owned systems. If regulations and policies that adversely impact the interconnection or use of our solar and energy storage systems are introduced, they could deter potential customers from purchasing our solar and energy storage products, threaten the economics of our existing contracts and cause us to cease solar and energy storage system sales and operations in the relevant jurisdictions, which may harm our business, financial condition and operating results.

Any failure by us to comply with a variety of U.S. and international privacy and consumer protection laws may harm us.

Any failure by us or our vendor or other business partners to comply with our public privacy notice or with federal, state or international privacy, data protection or security laws or regulations relating to the processing, collection, use, retention, security and transfer of personally identifiable information could result in regulatory or litigation-related actions against us, legal liability, fines, damages, ongoing audit requirements and other significant costs. Substantial expenses and operational changes may be required in connection with maintaining compliance with such laws, and in particular certain emerging privacy laws are still subject to a high degree of uncertainty as to their interpretation and application. For example, in May 2018, the General Data Protection Regulation began to fully apply to the processing of personal information collected from individuals located in the European Union, and has created new compliance obligations and significantly increased fines for noncompliance. Similarly, as of January 2020, the California Consumer Privacy Act imposes certain legal obligations on our use and processing of personal information related to California residents. Finally, new privacy and cybersecurity laws are coming into effect in China. Notwithstanding our efforts to protect the security and integrity of our customers' personal information, we may be required to expend significant resources to comply with data breach requirements if, for example, third parties improperly obtain and use the personal information of our customers or we otherwise experience a data loss with respect to customers' personal information. A major breach of our network security and systems may result in fines, penalties and damages and harm our brand, prospects and operating results.

We could be subject to liability, penalties and other restrictive sanctions and adverse consequences arising out of certain governmental investigations and proceedings.

We are cooperating with certain government investigations as discussed in Note 16, *Commitments and Contingencies*, to the consolidated financial statements included elsewhere in this Annual Report on Form 10-K. To our knowledge, no government agency in any such ongoing investigation has concluded that any wrongdoing occurred. However, we cannot predict the outcome or impact of any such ongoing matters, and there exists the possibility that we could be subject to liability, penalties and other restrictive sanctions and adverse consequences if the SEC, the U.S. Department of Justice or any other government agency were to pursue legal action in the future. Moreover, we expect to incur costs in responding to related requests for information and subpoenas, and if instituted, in defending against any governmental proceedings.

For example, on October 16, 2018, the U.S. District Court for the Southern District of New York entered a final judgment approving the terms of a settlement filed with the Court on September 29, 2018, in connection with the actions taken by the SEC relating to Mr. Musk's statement on August 7, 2018 that he was considering taking Tesla private. Pursuant to the settlement, we, among other things, paid a civil penalty of \$20 million, appointed an independent director as the chair of our board of directors, appointed two additional independent directors to our board of directors and made further enhancements to our disclosure controls and other corporate governance-related matters. On April 26, 2019, this settlement was amended to clarify certain of the previously-agreed disclosure procedures, which was subsequently approved by the Court. All other terms of the prior settlement were reaffirmed without modification. Although we intend to continue to comply with the terms and requirements of the settlement, if there is a lack of compliance or an alleged lack of compliance, additional enforcement actions or other legal proceedings may be instituted against us.

We may face regulatory challenges to or limitations on our ability to sell vehicles directly.

While we intend to continue to leverage our most effective sales strategies, including sales through our website, we may not be able to sell our vehicles through our own stores in certain states in the U.S. with laws that may be interpreted to impose limitations on this direct-to-consumer sales model. It has also been asserted that the laws in some states limit our ability to obtain dealer licenses from state motor vehicle regulators, and such assertions persist. In certain locations, decisions by regulators permitting us to sell vehicles have been and may be challenged by dealer associations and others as to whether such decisions comply with applicable state motor vehicle industry laws. We have prevailed in many of these lawsuits and such results have reinforced our continuing belief that state laws were not intended to apply to a manufacturer that does not have franchise dealers. In some states, there have also been regulatory and legislative efforts by dealer associations to propose laws that, if enacted, would prevent us from obtaining dealer licenses in their states given our current sales model. A few states have passed legislation that clarifies our ability to operate, but at the same time limits the number of dealer licenses we can obtain or stores that we can operate. The application of state laws applicable to our operations continues to be difficult to predict.

Internationally, there may be laws in jurisdictions we have not yet entered or laws we are unaware of in jurisdictions we have entered that may restrict our sales or other business practices. Even for those jurisdictions we have analyzed, the laws in this area can be complex, difficult to interpret and may change over time. Continued regulatory limitations and other obstacles interfering with our ability to sell vehicles directly to consumers may harm our financial condition and operating results.

Risks Related to the Ownership of Our Common Stock

The trading price of our common stock is likely to continue to be volatile.

The trading price of our common stock has been highly volatile and could continue to be subject to wide fluctuations in response to various factors, some of which are beyond our control. Our common stock has experienced over the last 52 weeks an intra-day trading high of \$900.40 per share and a low of \$70.10 per share, as adjusted to give effect to the reflect the five-for-one stock split effected in the form of a stock dividend in August 2020 (the “Stock Split”). The stock market in general, and the market for technology companies in particular, has experienced extreme price and volume fluctuations that have often been unrelated or disproportionate to the operating performance of those companies. In particular, a large proportion of our common stock has been historically and may in the future be traded by short sellers which may put pressure on the supply and demand for our common stock, further influencing volatility in its market price. Public perception and other factors outside of our control may additionally impact the stock price of companies like us that garner a disproportionate degree of public attention, regardless of actual operating performance. In addition, in the past, following periods of volatility in the overall market or the market price of our shares, securities class action litigation has been filed against us. While we defend such actions vigorously, any judgment against us or any future stockholder litigation could result in substantial costs and a diversion of our management’s attention and resources.

Our financial results may vary significantly from period to period due to fluctuations in our operating costs and other factors.

We expect our period-to-period financial results to vary based on our operating costs, which we anticipate will fluctuate as the pace at which we continue to design, develop and manufacture new products and increase production capacity by expanding our current manufacturing facilities and adding future facilities, may not be consistent or linear between periods. Additionally, our revenues from period to period may fluctuate as we introduce existing products to new markets for the first time and as we develop and introduce new products. As a result of these factors, we believe that quarter-to-quarter comparisons of our financial results, especially in the short term, are not necessarily meaningful and that these comparisons cannot be relied upon as indicators of future performance. Moreover, our financial results may not meet expectations of equity research analysts, ratings agencies or investors, who may be focused only on short-term quarterly financial results. If any of this occurs, the trading price of our stock could fall substantially, either suddenly or over time.

We may fail to meet our publicly announced guidance or other expectations about our business, which could cause our stock price to decline.

We may provide from time to time guidance regarding our expected financial and business performance. Correctly identifying key factors affecting business conditions and predicting future events is inherently an uncertain process, and our guidance may not ultimately be accurate and has in the past been inaccurate in certain respects, such as the timing of new product manufacturing ramps. Our guidance is based on certain assumptions such as those relating to anticipated production and sales volumes (which generally are not linear throughout a given period), average sales prices, supplier and commodity costs and planned cost reductions. If our guidance varies from actual results due to our assumptions not being met or the impact on our financial performance that could occur as a result of various risks and uncertainties, the market value of our common stock could decline significantly.

Transactions relating to our convertible senior notes may dilute the ownership interest of existing stockholders, or may otherwise depress the price of our common stock.

The conversion of some or all of the convertible senior notes issued by us or our subsidiaries would dilute the ownership interests of existing stockholders to the extent we deliver shares upon conversion of any of such notes by their holders, and we may be required to deliver a significant number of shares. Any sales in the public market of the common stock issuable upon such conversion could adversely affect their prevailing market prices. In addition, the existence of the convertible senior notes may encourage short selling by market participants because the conversion of such notes could be used to satisfy short positions, or the anticipated conversion of such notes into shares of our common stock could depress the price of our common stock.

Moreover, in connection with certain of the convertible senior notes, we entered into convertible note hedge transactions, which are expected to reduce the potential dilution and/or offset potential cash payments we are required to make in excess of the principal amount upon conversion of the applicable notes. We also entered into warrant transactions with the hedge counterparties, which could separately have a dilutive effect on our common stock to the extent that the market price per share of our common stock exceeds the applicable strike price of the warrants on the applicable expiration dates. In addition, the hedge counterparties or their affiliates may enter into various transactions with respect to their hedge positions, which could also affect the market price of our common stock or the convertible senior notes.

If Elon Musk were forced to sell shares of our common stock that he has pledged to secure certain personal loan obligations, such sales could cause our stock price to decline.

Certain banking institutions have made extensions of credit to Elon Musk, our Chief Executive Officer, a portion of which was used to purchase shares of common stock in certain of our public offerings and private placements at the same prices offered to third-party participants in such offerings and placements. We are not a party to these loans, which are partially secured by pledges of a portion of the Tesla common stock currently owned by Mr. Musk. If the price of our common stock were to decline substantially, Mr. Musk may be forced by one or more of the banking institutions to sell shares of Tesla common stock to satisfy his loan obligations if he could not do so through other means. Any such sales could cause the price of our common stock to decline further.

Anti-takeover provisions contained in our governing documents, applicable laws and our convertible senior notes could impair a takeover attempt.

Our certificate of incorporation and bylaws afford certain rights and powers to our board of directors that may facilitate the delay or prevention of an acquisition that it deems undesirable. We are also subject to Section 203 of the Delaware General Corporation Law and other provisions of Delaware law that limit the ability of stockholders in certain situations to effect certain business combinations. In addition, the terms of our convertible senior notes may require us to repurchase such notes in the event of a fundamental change, including a takeover of our company. Any of the foregoing provisions and terms that has the effect of delaying or deterring a change in control could limit the opportunity for our stockholders to receive a premium for their shares of our common stock, and could also affect the price that some investors are willing to pay for our common stock.

ITEM 1B. UNRESOLVED STAFF COMMENTS

None.

ITEM 2. PROPERTIES

We are headquartered in Palo Alto, California. Our principal facilities include a large number of properties in North America, Europe and Asia utilized for manufacturing and assembly, warehousing, engineering, retail and service locations, Supercharger sites and administrative and sales offices. Our facilities are used to support both of our reporting segments, and are suitable and adequate for the conduct of our business. We primarily lease such facilities with the exception of some manufacturing facilities. The following table sets forth the location of our primary owned and leased manufacturing facilities.

<u>Primary Manufacturing Facilities</u>	<u>Location</u>	<u>Owned or Leased</u>
Fremont Factory	Fremont, California	Owned
Gigafactory Nevada	Sparks, Nevada	Owned
Gigafactory New York	Buffalo, New York	Leased
Gigafactory Shanghai	Shanghai, China	*
Gigafactory Berlin	Grunheide, Germany	Owned
Gigafactory Texas	Austin, Texas	Owned

* We own the building and the land use rights with an initial term of 50 years. The land use rights are treated as operating lease right-of-use assets.

ITEM 3. LEGAL PROCEEDINGS

For a description of our material pending legal proceedings, please see Note 16, *Commitments and Contingencies*, to the consolidated financial statements included elsewhere in this Annual Report on Form 10-K.

In addition, each of the matters below is being disclosed pursuant to Item 103 of Regulation S-K because it relates to environmental regulations and aggregate civil penalties that could potentially exceed \$1 million. We believe that any proceeding that is material to our business or financial condition is likely to have potential penalties far in excess of such amount.

The Bay Area Air Quality Management District (“BAAQMD”) has issued notices of violation to us relating to air permitting and related compliance for the Fremont Factory, but has not initiated formal proceedings. We have disputed certain of these allegations and have asserted that there has been no related adverse community or environmental impact. While we have not yet resolved this matter, we remain in close communication with BAAQMD with respect to it. We do not currently expect any material adverse impact on our business.

The German Umweltbundesamt has issued our subsidiary in Germany a notice and fine in the amount of 12 million euro alleging its non-compliance under applicable laws relating to market participation notifications and take-back obligations with respect to end-of-life battery products required thereunder. This is primarily relating to administrative requirements, but Tesla has continued to take back battery packs, and although we cannot predict the outcome of this matter, including the final amount of any penalties, we have filed our objection and it is not expected to have a material adverse impact on our business.

We have also received a follow-up information request from the EPA under Section 114(a) of the Clean Air Act of 1963, as amended (the “Clean Air Act”). The EPA is reviewing the compliance of our Fremont Factory operations with applicable requirements under the Clean Air Act, and we are working with the EPA in responding its requests for information. While the outcome of this matter cannot be determined at this time, it is not currently expected to have a material adverse impact on our business.

ITEM 4. MINE SAFETY DISCLOSURES

Not applicable.

PART II

ITEM 5. MARKET FOR REGISTRANT'S COMMON EQUITY, RELATED STOCKHOLDER MATTERS AND ISSUER PURCHASES OF EQUITY SECURITIES

Market Information

Our common stock has traded on The NASDAQ Global Select Market under the symbol "TSLA" since it began trading on June 29, 2010. Our initial public offering was priced at \$3.40 per share on June 28, 2010 as adjusted to give effect to the Stock Split.

Holders

As of February 1, 2021, there were 5,353 holders of record of our common stock. A substantially greater number of holders of our common stock are "street name" or beneficial holders, whose shares are held by banks, brokers and other financial institutions.

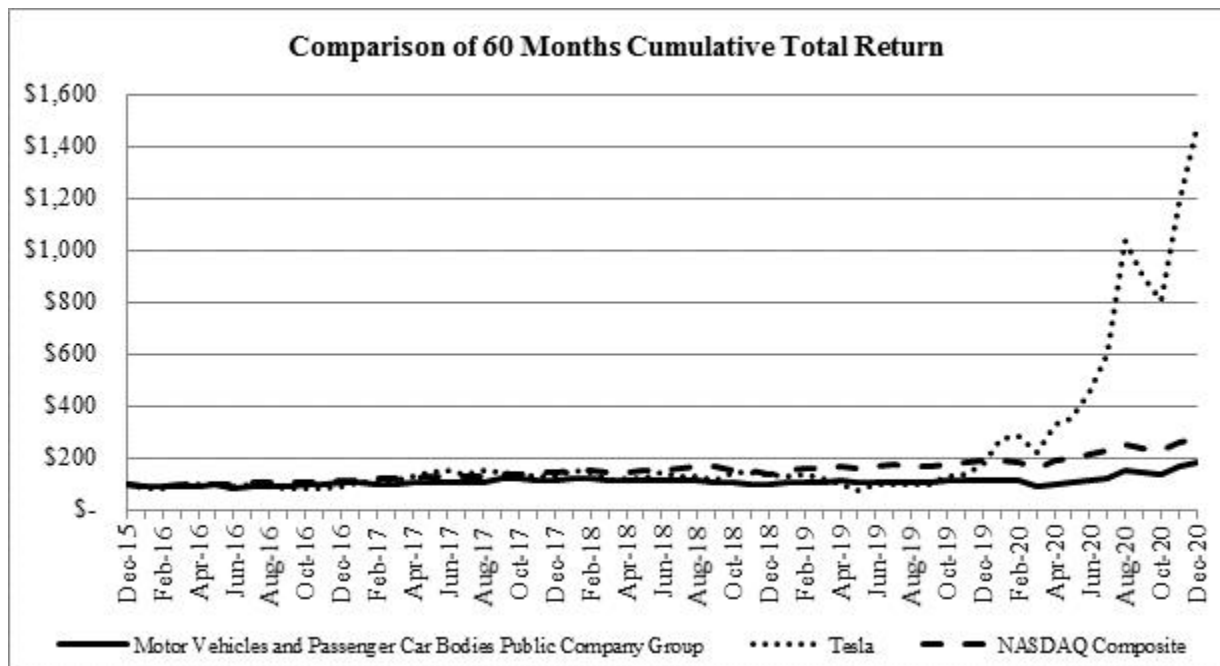
Dividend Policy

We have never declared or paid cash dividends on our common stock. We currently do not anticipate paying any cash dividends in the foreseeable future. Any future determination to declare cash dividends will be made at the discretion of our board of directors, subject to applicable laws, and will depend on our financial condition, results of operations, capital requirements, general business conditions and other factors that our board of directors may deem relevant.

Stock Performance Graph

This performance graph shall not be deemed "filed" for purposes of Section 18 of the Securities Exchange Act of 1934, as amended (the "Exchange Act"), or incorporated by reference into any filing of Tesla, Inc. under the Securities Act of 1933, as amended (the "Securities Act"), or the Exchange Act, except as shall be expressly set forth by specific reference in such filing.

The following graph shows a comparison, from January 1, 2016 through December 31, 2020, of the cumulative total return on our common stock, The NASDAQ Composite Index and a group of all public companies sharing the same SIC code as us, which is SIC code 3711, "Motor Vehicles and Passenger Car Bodies" (Motor Vehicles and Passenger Car Bodies Public Company Group). Such returns are based on historical results and are not intended to suggest future performance. Data for The NASDAQ Composite Index and the Motor Vehicles and Passenger Car Bodies Public Company Group assumes an investment of \$100 on January 1, 2016 and reinvestment of dividends. We have never declared or paid cash dividends on our common stock nor do we anticipate paying any such cash dividends in the foreseeable future.



Unregistered Sales of Equity Securities and Use of Proceeds

None.

Purchases of Equity Securities by the Issuer and Affiliated Purchasers

None.

ITEM 6. SELECTED CONSOLIDATED FINANCIAL DATA

The following selected consolidated financial data should be read in conjunction with “Management’s Discussion and Analysis of Financial Condition and Results of Operations” and the consolidated financial statements and the related notes included elsewhere in this Annual Report on Form 10-K and from the historical consolidated financial statements not included herein to fully understand factors that may affect the comparability of the information presented below (in millions, except per share data).

	Year Ended December 31,				
	2020	2019 (3)	2018 (2)	2017	2016 (1)
Consolidated Statements of Operations Data:					
Total revenues	\$ 31,536	\$ 24,578	\$ 21,461	\$ 11,759	\$ 7,000
Gross profit	\$ 6,630	\$ 4,069	\$ 4,042	\$ 2,223	\$ 1,599
Income (loss) from operations	\$ 1,994	\$ (69)	\$ (388)	\$ (1,632)	\$ (667)
Net income (loss) attributable to common stockholders	\$ 721	\$ (862)	\$ (976)	\$ (1,962)	\$ (675)
Net income (loss) per share of common stock attributable to common stockholders (4)					
Basic	\$ 0.74	\$ (0.98)	\$ (1.14)	\$ (2.37)	\$ (0.94)
Diluted	\$ 0.64	\$ (0.98)	\$ (1.14)	\$ (2.37)	\$ (0.94)
Weighted average shares used in computing net income (loss) per share of common stock (4)					
Basic	933	887	853	829	721
Diluted	1,083	887	853	829	721

	As of December 31,				
	2020	2019 (3)	2018 (2)	2017	2016 (1)
Consolidated Balance Sheet Data:					
Working capital (deficit)	\$ 12,469	\$ 1,436	\$ (1,686)	\$ (1,104)	\$ 433
Total assets	\$ 52,148	\$ 34,309	\$ 29,740	\$ 28,655	\$ 22,664
Total long-term liabilities	\$ 14,170	\$ 15,532	\$ 13,434	\$ 15,348	\$ 10,923

- (1) We acquired SolarCity Corporation (“SolarCity”) on November 21, 2016. SolarCity’s financial results have been included in our financial results from the acquisition date as previously reported in our Annual Report on Form 10-K for the year ended December 31, 2016.
- (2) We adopted ASC 606 in 2018. Prior periods have not been revised. For further details, refer to Note 2, *Summary of Significant Accounting Policies*, of the notes to the consolidated financial statements included in our Annual Report on Form 10-K for the year ended December 31, 2018.
- (3) We adopted ASC 842 in 2019. Prior periods have not been revised. For further details, refer to Note 2, *Summary of Significant Accounting Policies*, of the notes to the consolidated financial statements included in our Annual Report on Form 10-K for the year ended December 31, 2019.
- (4) Prior period results have been adjusted to give effect to the Stock Split. See Note 1, *Overview*, of the notes to the consolidated financial statements included elsewhere in this Annual Report on Form 10-K for further details.

ITEM 7. MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

The following discussion and analysis should be read in conjunction with the consolidated financial statements and the related notes included elsewhere in this Annual Report on Form 10-K. For discussion related to changes in financial condition and the results of operations for fiscal year 2018-related items, refer to Part II, Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations in our Annual Report on Form 10-K for fiscal year 2019, which was filed with the Securities and Exchange Commission on February 13, 2020.

Overview and 2020 Highlights

Our mission is to accelerate the world's transition to sustainable energy. We design, develop, manufacture, lease and sell high-performance fully electric vehicles, solar energy generation systems and energy storage products. We also offer maintenance, installation, operation, financial and other services related to our products.

In 2020, we produced 509,737 vehicles and delivered 499,647 vehicles. We are currently focused on increasing vehicle production and capacity, developing and ramping our battery cell technology, increasing the affordability of our vehicles, expanding our global infrastructure and introducing our next vehicles.

In 2020, we deployed 3.02 GWh of energy storage products and 205 megawatts of solar energy systems. We are currently focused on ramping production of energy storage products, improving our Solar Roof installation capability and efficiency and increasing market share of retrofit solar energy systems.

In 2020, we recognized total revenues of \$31.54 billion, representing an increase of \$6.96 billion compared to the prior year. We continue to ramp production, build new manufacturing capacity and expand our operations to enable increased deliveries and deployments of our products and further revenue growth.

In 2020, our net income attributable to common stockholders was \$721 million, representing a favorable change of \$1.58 billion compared to the prior year. In 2020, our operating margin was 6.3%, representing a favorable change of 6.6% compared to the prior year. We continue to focus on operational efficiencies, while we have seen an acceleration of non-cash stock-based compensation expense due to a rapid increase in our market capitalization and updates to our business outlook.

We ended 2020 with \$19.38 billion in cash and cash equivalents, representing an increase of \$13.12 billion from the end of 2019. Our cash flows from operating activities during 2020 was \$5.94 billion, compared to \$2.41 billion during 2019, and capital expenditures amounted to \$3.16 billion during 2020, compared to \$1.33 billion during 2019. Sustained growth has allowed our business to generally fund itself, but we will continue a number of capital-intensive projects in upcoming periods.

Management Opportunities, Challenges and Risks and 2021 Outlook

Impact of COVID-19 Pandemic

There continues to be worldwide impact from the COVID-19 pandemic. While we have been relatively successful in navigating such impact to date, we have previously been affected by temporary manufacturing closures, employment and compensation adjustments, and impediments to administrative activities supporting our product deliveries and deployments. There are also ongoing related risks to our business depending on the progression of the pandemic, and recent trends in certain regions have indicated potential returns to limited or closed government functions, business activities and person-to-person interactions. Global trade conditions and consumer trends may further adversely impact us and our industries. For example, pandemic-related issues have exacerbated port congestion and intermittent supplier shutdowns and delays, resulting in additional expenses to expedite delivery of critical parts. Similarly, increased demand for personal electronics has created a shortfall of microchip supply, and it is yet unknown how we may be impacted. Please see the "Results of Operations" section of this Item below and certain risk factors described in Part I, Item 1A, Risk Factors in this Annual Report on Form 10-K, particularly the first risk factor included there, for more detailed descriptions of the impact and risks to our business.

We cannot predict the duration or direction of current global trends from this pandemic, the sustained impact of which is largely unknown, is rapidly evolving and has varied across geographic regions. Ultimately, we continue to monitor macroeconomic conditions to remain flexible and to optimize and evolve our business as appropriate, and we will have to accurately project demand and infrastructure requirements globally and deploy our production, workforce and other resources accordingly.

Automotive—Production

The following is a summary of the status of production of each of our announced vehicle models in production and under development, as of the date of this Annual Report on Form 10-K:

Production Location	Vehicle Model(s)	Production Status
Fremont Factory	Model S and Model X	Active
	Model 3 and Model Y	Active
Gigafactory Shanghai	Model 3 and Model Y	Active
Gigafactory Berlin	Model Y	Constructing manufacturing facilities
Gigafactory Texas	Model Y	Constructing manufacturing facilities
TBD	Cybertruck	In development
	Tesla Semi	In development
	Tesla Roadster	In development

We recently announced updated versions of Model S and Model X featuring a redesigned powertrain and other improvements. In 2021, we are focused on ramping these models on new manufacturing equipment, as well as production rates of Model 3 and Model Y, to at least the capacity that we have installed. The next phase of production growth will depend on the construction of Gigafactory Berlin and Gigafactory Texas, each of which is progressing as planned for deliveries beginning in 2021. Our goal is to continuously decrease production costs and increase the affordability of our vehicles. We are continuing to develop and manufacture our own battery cells, with which we are targeting high-volume output, lower capital and production costs and longer range. As cell supply is critical to our business, coupling this strategy with cells from our suppliers will help us stay ahead of any potential constraints.

However, these plans are subject to uncertainties inherent in establishing and ramping manufacturing operations, which may be exacerbated by the number of concurrent international projects and any future impact from events outside of our control such as the COVID-19 pandemic and any industry-wide component constraints. Moreover, we must meet ambitious technological targets with our plans for battery cells as well as for iterative manufacturing and design improvements for our vehicles with each new factory.

Automotive—Demand and Sales

Our cost reduction efforts and additional localized procurement and manufacturing are key to our vehicles' affordability, and for example have allowed us to competitively price our vehicles in China. In addition to opening new factories in 2021, we will also continue to generate demand and brand awareness by improving our vehicles' functionality, including Autopilot, FSD and software features, and introducing anticipated future vehicles. Moreover, we expect to benefit from ongoing electrification of the automotive sector and increasing environmental awareness.

However, we operate in a cyclical industry that is sensitive to trade, environmental and political uncertainty, all of which may also be compounded by any future global impact from the COVID-19 pandemic. On the other hand, there have been recent signs of recovery from competitors that experienced downturns in 2020, meaning that we will have to continue to execute well to maintain the momentum that we have gained relative to an ever-growing competitive landscape.

Automotive—Deliveries and Customer Infrastructure

As our deliveries increase, we must work constantly to prevent our vehicle delivery capability from becoming a bottleneck on our total deliveries. Situating our factories closer to local markets should mitigate the strain on our deliveries. In any case, as we expand, we will have to continue to increase and staff our delivery, servicing and charging infrastructure, maintain our vehicle reliability and optimize our Supercharger locations to ensure cost-effectiveness and customer satisfaction. In particular, we remain focused on increasing the capability and efficiency of our servicing operations.

Energy Generation and Storage Demand, Production and Deployment

The long-term success of this business is dependent upon increasing margins through greater volumes. We continue to increase the production of our energy storage products to meet high levels of demand. For Powerwall, better availability and growing grid stability concerns drive higher interest, and cross-selling with our residential solar energy products will continue to benefit both product lines. We remain committed to increasing our retrofit solar energy business by offering a low-cost and simplified online ordering experience. In addition, we are working to improve our installation capabilities for Solar Roof by on-boarding and training a large number of installers and reducing the installation time dramatically. As these product lines grow, we will have to maintain adequate battery cell supply for our energy storage products and hire additional personnel, particularly skilled electricians to support the ramp of Solar Roof.

Cash Flow and Capital Expenditure Trends

Our capital expenditures are typically difficult to project beyond the short term given the number and breadth of our core projects at any given time, and uncertainties in future global market conditions resulting from the COVID-19 pandemic currently makes projections more challenging. We are simultaneously ramping new products in the new Model S and Model X, Model Y and Solar Roof, constructing or ramping manufacturing facilities on three continents and piloting the development and manufacture of new battery cell technologies, and the pace of our capital spend may vary depending on overall priority among projects, the pace at which we meet milestones, production adjustments to and among our various products, increased capital efficiencies and the addition of new projects. Owing and subject to the foregoing as well as the pipeline of announced projects under development and all other continuing infrastructure growth, we currently expect our capital expenditures to be \$4.50 to \$6.00 billion in 2021 and each of the next two fiscal years.

Our business has recently been consistently generating cash flow from operations in excess of our level of capital spend, and with better working capital management resulting in shorter days sales outstanding than days payable outstanding, our sales growth is also facilitating positive cash generation. On the other hand, we are likely to see heightened levels of capital expenditures during certain periods depending on the specific pace of our capital-intensive projects. Moreover, as our stock price has significantly increased recently, we have seen higher levels of early conversions of “in-the-money” convertible senior notes, which obligates us to deliver cash and or shares pursuant to the terms of those notes. Overall, we expect our ability to be self-funding to continue as long as macroeconomic factors support current trends in our sales. We also opportunistically strengthened our liquidity further through an at-the-market offering of common stock in December 2020, with net proceeds to us of approximately \$4.99 billion.

Operating Expense Trends

As long as we see expanding sales, and excluding the potential impact of non-cash stock compensation expense attributable to the 2018 CEO Performance Award and impairment charges on certain assets as explained below, we generally expect operating expenses relative to revenues to decrease as we additionally increase operational efficiency and process automation.

In March 2018, our stockholders approved a performance-based stock option award to our CEO (the “2018 CEO Performance Award”), consisting of 12 vesting tranches contingent on the achievement of specified market capitalization and operational milestones. We incur non-cash stock-based compensation expense for each tranche only after the related operational milestone initially becomes probable of being met based on a subjective assessment of our future financial performance, and if this happens following the grant date, we record at such time a cumulative catch-up expense that may be significant based on the length of time elapsed from the grant date. Moreover, the remaining expense for that tranche is ratably recorded over the period remaining until the later of (i) the expected achievement of the relevant operational milestone (if it has not yet been achieved) and (ii) the expected achievement of the related market capitalization milestone (if it has not yet been achieved). Upon vesting of a tranche, all remaining associated expense is recognized immediately. Because the expected market capitalization achievements are generally later than the related expected operational milestone achievements, the achievement of the former earlier than expected may increase the magnitude of any catch-up expense and/or accelerate the rate at which the remaining expense is recognized. During 2020, several operational milestones became probable and several tranches vested, including as a result of our market capitalization increasing rapidly, resulting in the recognition or acceleration of related expense earlier than anticipated and within a relatively short period of time. See Note 14, *Equity Incentive Plans—2018 CEO Performance Award*, to the consolidated financial statements included elsewhere in this Annual Report on Form 10-K for further details regarding the stock-based compensation relating to the 2018 CEO Performance Award. As our market capitalization is unpredictable and our financial performance improves, it is possible that the earlier-than-planned recognition of such expenses will continue in the near term.

In January 2021, we updated our investment policy to provide us with more flexibility to further diversify and maximize returns on our cash that is not required to maintain adequate operating liquidity. As part of the policy, we may invest a portion of such cash in certain specified alternative reserve assets. Thereafter, we invested an aggregate \$1.50 billion in bitcoin under this policy. Moreover, we expect to begin accepting bitcoin as a form of payment for our products in the near future, subject to applicable laws and initially on a limited basis, which we may or may not liquidate upon receipt. Digital assets are considered indefinite-lived intangible assets under applicable accounting rules. Accordingly, any decrease in their fair values below our carrying values for such assets at any time subsequent to their acquisition will require us to recognize impairment charges, whereas we may make no upward revisions for any market price increases until a sale. As we currently intend to hold these assets long-term, these charges may negatively impact our profitability in the periods in which such impairments occur even if the overall market values of these assets increase.

Critical Accounting Policies and Estimates

The consolidated financial statements are prepared in accordance with accounting principles generally accepted in the U.S. (“GAAP”). The preparation of the consolidated financial statements requires us to make estimates and assumptions that affect the reported amounts of assets, liabilities, revenues, costs and expenses and related disclosures. We base our estimates on historical experience, as appropriate, and on various other assumptions that we believe to be reasonable under the circumstances. Changes in the accounting estimates are reasonably likely to occur from period to period. Accordingly, actual results could differ significantly from the estimates made by our management. We evaluate our estimates and assumptions on an ongoing basis. To the extent that there are material differences between these estimates and actual results, our future financial statement presentation, financial condition, results of operations and cash flows may be affected.

Due to the COVID-19 pandemic, there has been uncertainty and disruption in the global economy and financial markets. The estimates used for, but not limited to, determining significant economic incentive for resale value guarantee arrangements, sales return reserves, the collectability of accounts receivable, inventory valuation, fair value of long-lived assets, goodwill, fair value of financial instruments, fair value and residual value of operating lease vehicles and solar energy systems subject to leases could be impacted. We have assessed the impact and are not aware of any specific events or circumstances that required an update to our estimates and assumptions or materially affected the carrying value of our assets or liabilities as of the date of issuance of this Annual Report on Form 10-K. These estimates may change as new events occur and additional information is obtained. Actual results could differ materially from these estimates under different assumptions or conditions.

Revenue Recognition

Automotive Segment

Automotive Sales Revenue

Automotive Sales without Resale Value Guarantee

Automotive sales revenue includes revenues related to deliveries of new vehicles and pay-per-use charges, and specific other features and services that meet the definition of a performance obligation under ASC 606, including access to our Supercharger network, internet connectivity, FSD features and over-the-air software updates. We recognize revenue on automotive sales upon delivery to the customer, which is when the control of a vehicle transfers. Payments are typically received at the point control transfers or in accordance with payment terms customary to the business. Other features and services such as access to our Supercharger network, internet connectivity and over-the-air software updates are provisioned upon control transfer of a vehicle and recognized over time on a straight-line basis as we have a stand-ready obligation to deliver such services to the customer. We recognize revenue related to these other features and services over the performance period, which is generally the expected ownership life of the vehicle or the eight-year life of the vehicle. Revenue related to FSD features is recognized when functionality is delivered to the customer. For our obligations related to automotive sales, we estimate standalone selling price by considering costs used to develop and deliver the service, third-party pricing of similar options and other information that may be available.

At the time of revenue recognition, we reduce the transaction price and record a sales return reserve against revenue for estimated variable consideration related to future product returns based on historical experience. In addition, any fees that are paid or payable by us to a customer’s lender when we arrange the financing are recognized as an offset against automotive sales revenue.

Costs to obtain a contract mainly relate to commissions paid to our sales personnel for the sale of vehicles. Commissions are not paid on other obligations such as access to our Supercharger network, internet connectivity, FSD features and over-the-air software updates. As our contract costs related to automotive sales are typically fulfilled within one year, the costs to obtain a contract are expensed as incurred. Amounts billed to customers related to shipping and handling are classified as automotive sales revenue, and we have elected to recognize the cost for freight and shipping when control over vehicles, parts or accessories have transferred to the customer as an expense in cost of automotive sales revenue. Our policy is to exclude taxes collected from a customer from the transaction price of automotive contracts.

Automotive Sales with Resale Value Guarantee or a Buyback Option

We offer resale value guarantees or similar buy-back terms to certain international customers who purchase vehicles and who finance their vehicles through one of our specified commercial banking partners. We also offer resale value guarantees in connection with automotive sales to certain leasing partners. Under these programs, we receive full payment for the vehicle sales price at the time of delivery and our counterparty has the option of selling their vehicle back to us during the guarantee period, which currently is generally at the end of the term of the applicable loan or financing program, for a pre-determined resale value.

With the exception of the *Vehicle Sales to Leasing Partners with a Resale Value Guarantee and a Buyback Option* program discussed within the *Automotive Leasing* section below, we recognize revenue when control transfers upon delivery to customers in accordance with ASC 606 as a sale with a right of return as we do not believe the customer has a significant economic incentive to exercise the resale value guarantee provided to them at contract inception. The process to determine whether there is a significant economic incentive includes a comparison of a vehicle's estimated market value at the time the option is exercisable with the guaranteed resale value to determine the customer's economic incentive to exercise. The performance obligations and the pattern of recognizing automotive sales with resale value guarantees are consistent with automotive sales without resale value guarantees with the exception of our estimate for sales return reserve. Sales return reserves for automotive sales with resale value guarantees are estimated based on historical experience plus consideration for expected future market values. On a quarterly basis, we assess the estimated market values of vehicles under our buyback options program to determine whether there have been changes to the likelihood of future product returns. As we accumulate more data related to the buyback values of our vehicles or as market conditions change, there may be material changes to their estimated values.

Automotive Regulatory Credits

We earn tradable credits in the operation of our automotive business under various regulations related to ZEVs, greenhouse gas, fuel economy and clean fuel. We sell these credits to other regulated entities who can use the credits to comply with emission standards and other regulatory requirements. Payments for automotive regulatory credits are typically received at the point control transfers to the customer, or in accordance with payment terms customary to the business. We recognize revenue on the sale of automotive regulatory credits at the time control of the regulatory credits is transferred to the purchasing party as automotive sales revenue in the consolidated statements of operations.

Automotive Leasing Revenue

Direct Vehicle Operating Leasing Program

We have outstanding leases under our direct vehicle operating leasing programs in the U.S., Canada and in certain countries in Europe. Qualifying customers are permitted to lease a vehicle directly from Tesla for up to 48 months. At the end of the lease term, customers are required to return the vehicles to us or for Model S and Model X leases in certain regions, may opt to purchase the vehicles for a pre-determined residual value. We account for these leasing transactions as operating leases. We record leasing revenues to automotive leasing revenue on a straight-line basis over the contractual term, and we record the depreciation of these vehicles to cost of automotive leasing revenue.

Our policy is to exclude taxes collected from a customer from the transaction price of automotive contracts.

Vehicle Sales to Leasing Partners with a Resale Value Guarantee and a Buyback Option

We offered buyback options in connection with automotive sales with resale value guarantees with certain leasing partner sales in the U.S. and where we expected the customer had a significant economic incentive to exercise the resale value guarantee provided to them at contract inception, we continued to recognize these transactions as operating leases. These transactions entailed a transfer of leases, which we had originated with an end-customer, to our leasing partner. As control of the vehicles had not been transferred in accordance with ASC 606, these transactions were accounted for as interest-bearing collateralized borrowings in accordance with ASC 840, *Leases*, prior to January 1, 2019. Under this program, cash was received for the full price of the vehicle and the collateralized borrowing value was generally recorded within resale value guarantees and the customer upfront down payment was recorded within deferred revenue. We amortize the deferred revenue amount to automotive leasing revenue on a straight-line basis over the option period and accrue interest expense based on our borrowing rate. We capitalized vehicles under this program to operating lease vehicles, net, on the consolidated balance sheets, and we record depreciation from these vehicles to cost of automotive leasing revenue during the period the vehicle is under a lease arrangement. Cash received for these vehicles, net of revenue recognized during the period, is classified as collateralized lease (repayments) borrowings within cash flows from financing activities in the consolidated statements of cash flows. With the adoption of ASC 842 on January 1, 2019, all new agreements under this program are accounted for as operating leases under ASC 842 and there was no material change in the timing and amount of revenue recognized over the term. Consequently, any cash flows for new agreements are classified as operating cash activities on the consolidated statements of cash flows.

At the end of the lease term, we settle our liability in cash by either purchasing the vehicle from the leasing partner for the buyback option amount or paying a shortfall to the option amount the leasing partner may realize on the sale of the vehicle. Any remaining balances within deferred revenue and resale value guarantee will be settled to automotive leasing revenue. The end customer can extend the lease for a period of up to 6 months. In cases where the leasing partner retains ownership of the vehicle after the end of our option period, we expense the net value of the leased vehicle to cost of automotive leasing revenue.

Direct Sales-Type Leasing Program

We have outstanding direct leases and vehicles financed by us under loan arrangements accounted for as sales-type leases under ASC 842 in certain countries in Asia and Europe, which we introduced in volume during the third quarter of 2020. Depending on the specific program, customers may or may not have a right to return the vehicle to us during or at the end of the lease term. If the customer does not have a right to return, the customer will take title to the vehicle at the end of the lease term after making all contractual payments. Under the programs for which there is a right to return, the purchase option is reasonably certain to be exercised by the lessee and we therefore expect the customer to take title to the vehicle at the end of the lease term after making all contractual payments. Qualifying customers are permitted to lease a vehicle directly under these programs for up to 48 months. Our loan arrangements under these programs can have terms for up to 72 months. We recognize all revenue and costs associated with the sales-type lease as automotive leasing revenue and automotive leasing cost of revenue, respectively, upon delivery of the vehicle to the customer. Interest income based on the implicit rate in the lease is recorded to automotive leasing revenue over time as customers are invoiced on a monthly basis.

Energy Generation and Storage Segment

Energy Generation and Storage Sales

Energy generation and storage sales revenue consists of the sale of solar energy systems and energy storage systems to residential, small commercial, and large commercial and utility grade customers, including solar subscription-based arrangements. Energy generation and storage sales revenue also includes revenue from agreements for solar energy systems and PPAs that commence after January 1, 2019, which is recognized as earned, based on the amount of capacity provided for solar energy systems or electricity delivered for PPAs at the contractual billing rates, assuming all other revenue recognition criteria have been met. Under the practical expedient available under ASC 606-10-55-18, we recognize revenue based on the value of the service which is consistent with the billing amount. Sales of solar energy systems to residential and small scale commercial customers consist of the engineering, design and installation of the system. Post-installation, residential and small scale commercial customers receive a proprietary monitoring system that captures and displays historical energy generation data. Residential and small scale commercial customers pay the full purchase price of the solar energy system upfront. Revenue for the design and installation obligation is recognized when control transfers, which is when we install a solar energy system and the system passes inspection by the utility or the authority having jurisdiction. Revenue for the monitoring service is recognized ratably as a stand-ready obligation over the warranty period of the solar energy system. Sales of energy storage systems to residential and small scale commercial customers consist of the installation of the energy storage system and revenue is recognized when control transfers, which is when the product has been delivered or, if we are performing installation, when installed and commissioned. Payment for such storage systems is made upon invoice or in accordance with payment terms customary to the business.

For large commercial and utility grade solar energy system and energy storage system sales which consist of the engineering, design and installation of the system, customers make milestone payments that are consistent with contract-specific phases of a project. Revenue from such contracts is recognized over time using the percentage of completion method based on cost incurred as a percentage of total estimated contract costs for energy storage system sales and as a percentage of total estimated labor hours for solar energy system sales. Certain large-scale commercial and utility grade solar energy system and energy storage system sales also include operations and maintenance service which are negotiated with the design and installation contracts and are thus considered to be a combined contract with the design and installation service. For certain large commercial and utility grade solar energy systems and energy storage systems where the percentage of completion method does not apply, revenue is recognized when control transfers, which is when the product has been delivered to the customer and commissioned for energy storage systems and when the project has received permission to operate from the utility for solar energy systems. Operations and maintenance service revenue is recognized ratably over the respective contract term for solar energy system sales and upon delivery of the service for energy storage system sales. Customer payments for such services are usually paid annually or quarterly in advance.

In instances where there are multiple performance obligations in a single contract, we allocate the consideration to the various obligations in the contract based on the relative standalone selling price method. Standalone selling prices are estimated based on estimated costs plus margin or by using market data for comparable products. Costs incurred on the sale of residential installations before the solar energy systems are completed are included as work in process within inventory in the consolidated balance sheets. Any fees that are paid or payable by us to a solar loan lender would be recognized as an offset against revenue. Costs to obtain a contract relate mainly to commissions paid to our sales personnel related to the sale of solar energy systems and energy storage systems. As our contract costs related to solar energy system and energy storage system sales are typically fulfilled within one year, the costs to obtain a contract are expensed as incurred.

As part of our solar energy system and energy storage system contracts, we may provide the customer with performance guarantees that warrant that the underlying system will meet or exceed the minimum energy generation or energy performance requirements specified in the contract. In certain instances, we may receive a bonus payment if the system performs above a specified level. Conversely, if a solar energy system or energy storage system does not meet the performance guarantee requirements, we may be required to pay liquidated damages. Other forms of variable consideration related to our large commercial and utility grade solar energy system and energy storage system contracts include variable customer payments that will be made based on our energy market participation activities. Such guarantees and variable customer payments represent a form of variable consideration and are estimated at contract inception at their most likely amount and updated at the end of each reporting period as additional performance data becomes available. Such estimates are included in the transaction price only to the extent that it is probable a significant reversal of revenue will not occur.

We record as deferred revenue any non-refundable amounts that are collected from customers related to fees charged for prepayments and remote monitoring service and operations and maintenance service, which is recognized as revenue ratably over the respective customer contract term.

Energy Generation and Storage Leasing

For revenue arrangements where we are the lessor under operating lease agreements for energy generation and storage products, we record lease revenue from minimum lease payments, including upfront rebates and incentives earned from such systems, on a straight-line basis over the life of the lease term, assuming all other revenue recognition criteria have been met. The difference between the payments received and the revenue recognized is recorded as deferred revenue or deferred asset on the consolidated balance sheet.

For solar energy systems where customers purchase electricity from us under PPAs prior to January 1, 2019, we have determined that these agreements should be accounted for as operating leases pursuant to ASC 840. Revenue is recognized based on the amount of electricity delivered at rates specified under the contracts, assuming all other revenue recognition criteria are met.

We record as deferred revenue any amounts that are collected from customers, including lease prepayments, in excess of revenue recognized and operations and maintenance service fees, which is recognized as revenue ratably over the respective customer contract term. Deferred revenue also includes the portion of rebates and incentives received from utility companies and various local and state government agencies, which is recognized as revenue over the lease term.

We capitalize initial direct costs from the execution of agreements for solar energy systems and PPAs, which include the referral fees and sales commissions, as an element of solar energy systems, net, and subsequently amortize these costs over the term of the related agreements.

Inventory Valuation

Inventories are stated at the lower of cost or net realizable value. Cost is computed using standard cost for vehicles and energy storage products, which approximates actual cost on a first-in, first-out basis. In addition, cost for solar energy systems is recorded using actual cost. We record inventory write-downs for excess or obsolete inventories based upon assumptions about current and future demand forecasts. If our inventory on-hand is in excess of our future demand forecast, the excess amounts are written-off.

We also review our inventory to determine whether its carrying value exceeds the net amount realizable upon the ultimate sale of the inventory. This requires us to determine the estimated selling price of our vehicles less the estimated cost to convert the inventory on-hand into a finished product. Once inventory is written-down, a new, lower cost basis for that inventory is established and subsequent changes in facts and circumstances do not result in the restoration or increase in that newly established cost basis.

Should our estimates of future selling prices or production costs change, additional and potentially material increases to this reserve may be required. A small change in our estimates may result in a material charge to our reported financial results.

Warranties

We provide a manufacturer's warranty on all new and used vehicles and a warranty on the installation and components of the energy generation and storage systems we sell for periods typically between 10 to 25 years. We accrue a warranty reserve for the products sold by us, which includes our best estimate of the projected costs to repair or replace items under warranties and recalls when identified. These estimates are based on actual claims incurred to date and an estimate of the nature, frequency and costs of future claims. These estimates are inherently uncertain given our relatively short history of sales, and changes to our historical or projected warranty experience may cause material changes to the warranty reserve in the future. The warranty reserve does not include projected warranty costs associated with our vehicles subject to operating lease accounting and our solar energy systems under lease contracts or PPAs, as the costs to repair these warranty claims are expensed as incurred. The portion of the warranty reserve expected to be incurred within the next 12 months is included within accrued liabilities and other, while the remaining balance is included within other long-term liabilities on the consolidated balance sheets. Warranty expense is recorded as a component of cost of revenues in the consolidated statements of operations.

Stock-Based Compensation

We use the fair value method of accounting for our stock options and restricted stock units ("RSUs") granted to employees and for our employee stock purchase plan (the "ESPP") to measure the cost of employee services received in exchange for the stock-based awards. The fair value of stock option awards with only service and/or performance conditions is estimated on the grant or offering date using the Black-Scholes option-pricing model. The Black-Scholes option-pricing model requires inputs such as the risk-free interest rate, expected term and expected volatility. These inputs are subjective and generally require significant judgment. The fair value of RSUs is measured on the grant date based on the closing fair market value of our common stock. The resulting cost is recognized over the period during which an employee is required to provide service in exchange for the awards, usually the vesting period, which is generally four years for stock options and RSUs and six months for the ESPP. Stock-based compensation expense is recognized on a straight-line basis, net of actual forfeitures in the period.

For performance-based awards, stock-based compensation expense is recognized over the expected performance achievement period of individual performance milestones when the achievement of each individual performance milestone becomes probable. For performance-based awards with a vesting schedule based entirely on the attainment of both performance and market conditions, stock-based compensation expense associated with each tranche is recognized over the longer of (i) the expected achievement period for the operational milestone for such tranche and (ii) the expected achievement period for the related market capitalization milestone determined on the grant date, beginning at the point in time when the relevant operational milestone is considered probable of being achieved. If such operational milestone becomes probable any time after the grant date, we will recognize a cumulative catch-up expense from the grant date to that point in time. If the related market capitalization milestone is achieved earlier than its expected achievement period and the achievement of the related operational milestone, then the stock-based compensation expense will be recognized over the expected achievement period for the operational milestone, which may accelerate the rate at which such expense is recognized. If additional operational milestones become probable, stock-based compensation expense will be recorded in the period it becomes probable including cumulative catch-up expense for the service provided since the grant date. The fair value of such awards is estimated on the grant date using Monte Carlo simulations.

As we accumulate additional employee stock-based awards data over time and as we incorporate market data related to our common stock, we may calculate significantly different volatilities and expected lives, which could materially impact the valuation of our stock-based awards and the stock-based compensation expense that we will recognize in future periods. Stock-based compensation expense is recorded in cost of revenues, research and development expense and selling, general and administrative expense in the consolidated statements of operations.

Income Taxes

We are subject to taxes in the U.S. and in many foreign jurisdictions. Significant judgment is required in determining our provision for income taxes, our deferred tax assets and liabilities and any valuation allowance recorded against our net deferred tax assets. We make these estimates and judgments about our future taxable income that are based on assumptions that are consistent with our future plans. Tax laws, regulations and administrative practices may be subject to change due to economic or political conditions including fundamental changes to the tax laws applicable to corporate multinationals. The U.S., many countries in the European Union and a number of other countries are actively considering changes in this regard. As of December 31, 2020, we had recorded a full valuation allowance on our net U.S. deferred tax assets because we expect that it is more likely than not that our U.S. deferred tax assets will not be realized. Should the actual amounts differ from our estimates, the amount of our valuation allowance could be materially impacted.

Furthermore, significant judgment is required in evaluating our tax positions. In the ordinary course of business, there are many transactions and calculations for which the ultimate tax settlement is uncertain. As a result, we recognize the effect of this uncertainty on our tax attributes or taxes payable based on our estimates of the eventual outcome. These effects are recognized when, despite our belief that our tax return positions are supportable, we believe that it is likely that some of those positions may not be fully sustained upon review by tax authorities. We are required to file income tax returns in the U.S. and various foreign jurisdictions, which requires us to interpret the applicable tax laws and regulations in effect in such jurisdictions. Such returns are subject to audit by the various federal, state and foreign taxing authorities, who may disagree with respect to our tax positions. We believe that our consideration is adequate for all open audit years based on our assessment of many factors, including past experience and interpretations of tax law. We review and update our estimates in light of changing facts and circumstances, such as the closing of a tax audit, the lapse of a statute of limitations or a change in estimate. To the extent that the final tax outcome of these matters differs from our expectations, such differences may impact income tax expense in the period in which such determination is made. The eventual impact on our income tax expense depends in part if we still have a valuation allowance recorded against our deferred tax assets in the period that such determination is made.

Principles of Consolidation

The consolidated financial statements reflect our accounts and operations and those of our subsidiaries in which we have a controlling financial interest. In accordance with the provisions of ASC 810, *Consolidation*, we consolidate any variable interest entity ("VIE") of which we are the primary beneficiary. We form VIEs with our financing fund investors in the ordinary course of business in order to facilitate the funding and monetization of certain attributes associated with our solar energy systems and leases under our direct vehicle leasing programs. 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 VIEs, through arrangements that do not involve controlling voting interests. ASC 810 requires a variable interest holder to consolidate a VIE if that party has the power to direct the activities of the VIE that most significantly impact the VIE's economic performance and the obligation to absorb losses of the VIE that could potentially be significant to the VIE or the right to receive benefits from the VIE that could potentially be significant to the VIE. We do not consolidate a VIE in which we have a majority ownership interest when we are not considered the primary beneficiary. We have determined that we are the primary beneficiary of all the VIEs. We evaluate our relationships with all the VIEs on an ongoing basis to ensure that we continue to be the primary beneficiary. All intercompany transactions and balances have been eliminated upon consolidation.

Noncontrolling Interests and Redeemable Noncontrolling Interests

Noncontrolling interests and redeemable noncontrolling interests represent third-party interests in the net assets under certain funding arrangements, or funds, that we enter into to finance the costs of solar energy systems and vehicles under operating leases. We have determined that the contractual provisions of the funds represent substantive profit sharing arrangements. We have further determined that the methodology for calculating the noncontrolling interest and redeemable noncontrolling interest balances that reflects the substantive profit sharing arrangements is a balance sheet approach using the hypothetical liquidation at book value ("HLBV") method. We, therefore, determine the amount of the noncontrolling interests and redeemable noncontrolling interests in the net assets of the funds at each balance sheet date using the HLBV method, which is presented on the consolidated balance sheet as noncontrolling interests in subsidiaries and redeemable noncontrolling interests in subsidiaries. Under the HLBV method, the amounts reported as noncontrolling interests and redeemable noncontrolling interests in the consolidated balance sheet represent the amounts the third parties would hypothetically receive at each balance sheet date under the liquidation provisions of the funds, assuming the net assets of the funds were liquidated at their recorded amounts determined in accordance with GAAP and with tax laws effective at the balance sheet date and distributed to the third parties. The third parties' interests in the results of operations of the funds are determined as the difference in the noncontrolling interest and redeemable noncontrolling interest balances in the consolidated balance sheets between the start and end of each reporting period, after taking into account any capital transactions between the funds and the third parties. However, the redeemable noncontrolling interest balance is at least equal to the redemption amount. The redeemable noncontrolling interest balance is presented as temporary equity in the mezzanine section of the consolidated balance sheet since these third parties have the right to redeem their interests in the funds for cash or other assets. For certain funds, there may be significant fluctuations in net income (loss) attributable to noncontrolling interests and redeemable noncontrolling interests in subsidiaries due to changes in the liquidation provisions as time-based milestones are reached.

Results of Operations

Effects of COVID-19

The COVID-19 pandemic impacted our business and financial results in 2020.

The temporary suspension of production at our factories during the first half of 2020 caused production limitations that, together with reduced or closed government and third party partner operations in the year, negatively impacted our deliveries and deployments in 2020. While we resumed operations at all of our factories worldwide, our temporary suspension at our factories resulted in idle capacity charges as we still incurred fixed costs such as depreciation, certain payroll related expenses and property taxes. As part of our response strategy to the business disruptions and uncertainty around macroeconomic conditions caused by the COVID-19 pandemic, we instituted cost reduction initiatives across our business globally to be commensurate to the scope of our operations while they were scaled back in the first half of 2020. This included temporary labor cost reduction measures such as employee furloughs and compensation reductions. Additionally, we suspended non-critical operating spend and opportunistically renegotiated supplier and vendor arrangements. As part of various governmental responses to the pandemic granted to companies globally, we received certain payroll related benefits which helped to reduce the impact of the COVID-19 pandemic on our financial results. Such payroll related benefits related to our direct headcount have been primarily netted against our disclosed idle capacity charges and they marginally reduced our operating expenses. The impact of the idle capacity charges incurred during the first half of 2020 were almost entirely offset by our cost savings initiatives and payroll related benefits.

Revenues

(Dollars in millions)	Year Ended December 31,			2020 vs. 2019 Change		2019 vs. 2018 Change	
	2020	2019	2018	\$	%	\$	%
Automotive sales	\$ 26,184	\$ 19,952	\$ 17,632	\$ 6,232	31%	\$ 2,320	13%
Automotive leasing	1,052	869	883	183	21%	(14)	-2%
Total automotive revenues	27,236	20,821	18,515	6,415	31%	2,306	12%
Services and other	2,306	2,226	1,391	80	4%	835	60%
Total automotive & services and other segment revenue	29,542	23,047	19,906	6,495	28%	3,141	16%
Energy generation and storage segment revenue	1,994	1,531	1,555	463	30%	(24)	-2%
Total revenues	<u>\$ 31,536</u>	<u>\$ 24,578</u>	<u>\$ 21,461</u>	<u>\$ 6,958</u>	28%	<u>\$ 3,117</u>	15%

Automotive & Services and Other Segment

Automotive sales revenue includes revenues related to cash deliveries of new Model S, Model X, Model 3 and Model Y vehicles, including access to our Supercharger network, internet connectivity, FSD features and over-the-air software updates, as well as sales of regulatory credits to other automotive manufacturers. Cash deliveries are vehicles that are not subject to lease accounting. Our revenue from regulatory credits fluctuates depending on when a contract is executed with a buyer and when the credits are delivered.

Automotive leasing revenue includes the amortization of revenue for vehicles under direct operating lease agreements as well as those sold with resale value guarantees accounted for as operating leases under lease accounting. We began offering direct leasing for Model 3 vehicles in the second quarter of 2019 and we began offering direct leasing for Model Y vehicles in the third quarter of 2020. Additionally, automotive leasing revenue includes direct sales-type leasing programs where we recognize all revenue associated with the sales-type lease upon delivery to the customer, which we introduced in volume during the third quarter of 2020.

Services and other revenue consists of non-warranty after-sales vehicle services, sales of used vehicles, retail merchandise, sales by our acquired subsidiaries to third party customers and vehicle insurance revenue.

2020 compared to 2019

Automotive sales revenue increased \$6.23 billion, or 31%, in the year ended December 31, 2020 as compared to the year ended December 31, 2019, primarily due to an increase of 129,268 Model 3 and Model Y cash deliveries despite production limitations as a result of temporary suspension of production at the Fremont Factory and Gigafactory Nevada during the first half of 2020. We were able to increase deliveries year over year from production ramping at both Gigafactory Shanghai and the Fremont Factory. There was also an increase of \$986 million from additional sales of regulatory credits to \$1.58 billion in the year ended December 31, 2020. Additionally, due to pricing adjustments we made to our vehicle offerings during the year ended December 31, 2019, we estimated that there was a greater likelihood that customers would exercise their buyback options and adjusted our sales return reserve on vehicles previously sold under our buyback options program which resulted in a reduction of automotive sales revenue of \$555 million. We made further pricing adjustments that resulted in a similar but smaller reduction of automotive sales revenue of \$72 million during the year ended December 31, 2020. The smaller reduction in revenue from pricing adjustments resulted in a positive impact to automotive sales revenue of \$483 million year over year. These factors increasing automotive sales revenue were partially offset by a decrease in the combined average selling price of Model 3 and Model Y. Despite the inclusion of higher priced Model Y deliveries in 2020, the combined average selling price of Model 3 and Model Y decreased due to a higher proportion of Model 3 Standard Range variants in our sales mix compared to the prior year. Additionally, there was a decrease in automotive sales revenue from 8,669 fewer Model S and Model X cash deliveries at a relatively consistent combined average selling price in the year ended December 31, 2020 compared to the prior year.

Automotive leasing revenue increased \$183 million, or 21%, in the year ended December 31, 2020 as compared to the year ended December 31, 2019, primarily due to an increase in cumulative vehicles under our direct operating lease program and the introduction of direct sales-type leasing programs which we began offering in volume during the third quarter of 2020 where we recognize all revenue associated with the sales-type lease upon delivery to the customer. These increases were partially offset by the decreases in automotive leasing revenue associated with our resale value guarantee leasing programs accounted for as operating leases as those portfolios have declined.

Services and other revenue increased \$80 million, or 4%, in the year ended December 31, 2020 as compared to the year ended December 31, 2019, primarily due to an increase in non-warranty maintenance services revenue as our fleet continues to grow, an increase in retail merchandise revenue and an increase in sales by our acquired subsidiaries to third party customers as we had a partial year of sales in the prior year from our mid-year 2019 acquisitions. These increases were partially offset by a decrease in used vehicle revenue driven by a reduction in non-Tesla trade-ins.

Energy Generation and Storage Segment

Energy generation and storage revenue includes sales and leasing of solar energy generation and energy storage products, services related to such products and sales of solar energy systems incentives.

2020 compared to 2019

Energy generation and storage revenue increased by \$463 million, or 30%, in the year ended December 31, 2020 as compared to the year ended December 31, 2019, primarily due to increases in deployments of Megapack, solar cash and loan jobs and Powerwall, partially offset by a decrease in deployments of Powerpack and reduced average selling prices on our solar cash and loan jobs as a result of our low cost solar strategy. Powerpack deployments have decreased following the introduction of our Megapack product, which we began deploying in late 2019.

Cost of Revenues and Gross Margin

(Dollars in millions)	Year Ended December 31,			2020 vs. 2019 Change		2019 vs. 2018 Change	
	2020	2019	2018	\$	%	\$	%
Cost of revenues							
Automotive sales	\$ 19,696	\$ 15,939	\$ 13,686	\$ 3,757	24%	\$ 2,253	16%
Automotive leasing	563	459	488	104	23%	(29)	-6%
Total automotive cost of revenues	20,259	16,398	14,174	3,861	24%	2,224	16%
Services and other	2,671	2,770	1,880	(99)	-4%	890	47%
Total automotive & services and other segment cost of revenues	22,930	19,168	16,054	3,762	20%	3,114	19%
Energy generation and storage segment	1,976	1,341	1,365	635	47%	(24)	-2%
Total cost of revenues	\$ 24,906	\$ 20,509	\$ 17,419	\$ 4,397	21%	\$ 3,090	18%
Gross profit total automotive	\$ 6,977	\$ 4,423	\$ 4,341				
Gross margin total automotive	26%	21%	23%				
Gross profit total automotive & services and other segment	\$ 6,612	\$ 3,879	\$ 3,852				
Gross margin total automotive & services and other segment	22%	17%	19%				
Gross profit energy generation and storage segment	\$ 18	\$ 190	\$ 190				
Gross margin energy generation and storage segment	1%	12%	12%				
Total gross profit	\$ 6,630	\$ 4,069	\$ 4,042				
Total gross margin	21%	17%	19%				

Automotive & Services and Other Segment

Cost of automotive sales revenue includes direct parts, material and labor costs, manufacturing overhead, including depreciation costs of tooling and machinery, shipping and logistic costs, vehicle connectivity costs, allocations of electricity and infrastructure costs related to our Supercharger network and reserves for estimated warranty expenses. Cost of automotive sales revenues also includes adjustments to warranty expense and charges to write down the carrying value of our inventory when it exceeds its estimated net realizable value and to provide for obsolete and on-hand inventory in excess of forecasted demand.

Cost of automotive leasing revenue includes the amortization of operating lease vehicles over the lease term, cost of goods sold associated with direct sales-type leases which were introduced in volume in the third quarter of 2020, as well as warranty expenses related to leased vehicles. Cost of automotive leasing revenue also includes vehicle connectivity costs and allocations of electricity and infrastructure costs related to our Supercharger network for vehicles under our leasing programs.

Cost of services and other revenue includes costs associated with providing non-warranty after-sales services, costs to acquire and certify used vehicles, costs for retail merchandise, and costs to provide vehicle insurance. Cost of services and other revenue also includes direct parts, material and labor costs and manufacturing overhead associated with the sales by our acquired subsidiaries to third party customers.

2020 compared to 2019

Cost of automotive sales revenue increased \$3.76 billion, or 24%, in the year ended December 31, 2020 as compared to the year ended December 31, 2019, primarily due to an increase of 129,268 Model 3 and Model Y cash deliveries. Due to pricing adjustments we made to our vehicle offerings during the year ended December 31, 2019, we estimated that there was a greater likelihood that customers would exercise their buyback options and if customers elect to exercise the buyback option, we expect to be able to subsequently resell the returned vehicles, which resulted in a reduction of cost of automotive sales revenue of \$451 million. We made further pricing adjustments that resulted in a similar but smaller reduction of cost of automotive sales revenue of \$42 million during the year ended December 31, 2020. Additionally, there was an increase to cost of automotive sales revenue from idle capacity charges of \$213 million as a result of temporary suspension of production at the Fremont Factory and Gigafactory Nevada during the first half of 2020. These factors increasing cost of automotive sales revenue were partially offset by a decrease in average Model 3 costs per unit due to lower material, manufacturing, freight and duty costs from localized procurement and manufacturing in China and a higher sales mix of lower end trims, as well as a decrease of 8,669 Model S and Model X cash deliveries in the year ended December 31, 2020 compared to the prior year.

Cost of automotive leasing revenue increased \$104 million, or 23%, in the year ended December 31, 2020 as compared to the year ended December 31, 2019, primarily due to an increase in cumulative vehicles under our direct operating lease program and the introduction of direct sales-type leasing programs which we began offering in volume during the third quarter of 2020 where we recognize all cost of revenue associated with the sales-type lease upon delivery to the customer. These increases were partially offset by the decreases in cost of automotive lease revenue associated with our resale value guarantee leasing programs which are accounted for as operating leases as those portfolios have declined.

Cost of services and other revenue decreased \$99 million, or 4%, in the year ended December 31, 2020 as compared to the year ended December 31, 2019, primarily due to a decrease in used vehicle cost of revenue driven by a reduction in non-Tesla trade-ins, partially offset by increases in non-warranty maintenance services as our fleet continues to grow and an increase in costs of retail merchandise as our sales have increased.

Gross margin for total automotive increased from 21% to 26% in the year ended December 31, 2020 as compared to the year ended December 31, 2019, primarily due to an improvement of Model 3 gross margin primarily from lower material, manufacturing, freight and duty costs from localized procurement and manufacturing in China, partially offset by a decrease in the average selling price of Model 3 due to a higher proportion of Model 3 Standard Range variants in our sales mix compared to the prior year. Additionally, there was an increase of \$986 million in sales of regulatory credits and a positive impact from Model Y deliveries in 2020 as Model Y gross margin was higher than our prior year total automotive gross margin. These increases were partially offset by idle capacity charges of \$213 million as a result of a temporary suspension of production at the Fremont Factory and Gigafactory Nevada during the first half of 2020.

Gross margin for total automotive & services and other segment increased from 17% to 22% in the year ended December 31, 2020 as compared to the year ended December 31, 2019, primarily due to the automotive gross margin impacts discussed above and a lower proportion of services and other, which operated at a lower gross margin than our automotive business, within the segment in the year ended December 31, 2020. Additionally, there was an improvement in our non-warranty maintenance services gross margin due to increased operational efficiencies despite additional costs from ramping service centers to accommodate a larger deployed fleet and an improvement in our used vehicle sales gross margin.

Energy Generation and Storage Segment

Cost of energy generation and storage revenue includes direct and indirect material and labor costs, warehouse rent, freight, warranty expense, other overhead costs and amortization of certain acquired intangible assets. Cost of energy generation and storage revenue also includes charges to write down the carrying value of our inventory when it exceeds its estimated net realizable value and to provide for obsolete and on-hand inventory in excess of forecasted demand. In agreements for solar energy system and PPAs where we are the lessor, the cost of revenue is primarily comprised of depreciation of the cost of leased solar energy systems, maintenance costs associated with those systems and amortization of any initial direct costs.

2020 compared to 2019

Cost of energy generation and storage revenue increased by \$635 million, or 47%, in the year ended December 31, 2020 as compared to the year ended December 31, 2019, primarily due to increases in deployments of Megapack, higher costs from temporary manufacturing underutilization of our Solar Roof ramp, increases in deployments of Powerwall and idle capacity charges of \$20 million as a result of temporary suspension of production at Gigafactory New York during the first half of 2020. These increases were partially offset by a decrease in deployments of Powerpack.

Gross margin for energy generation and storage decreased from 12% to 1% in the year ended December 31, 2020 as compared to the year ended December 31, 2019 primarily due to a higher proportion of Solar Roof in our overall energy business which operated at lower gross margins as a result of temporary manufacturing underutilization during product ramp. Additionally, there were lower gross margins in our solar cash and loan business from reduced average selling prices as a result of our low cost solar strategy, partially offset by lower materials and manufacturing costs.

Research and Development Expense

	Year Ended December 31,			2020 vs. 2019 Change		2019 vs. 2018 Change	
	2020	2019	2018	\$	%	\$	%
(Dollars in millions)							
Research and development	\$ 1,491	\$ 1,343	\$ 1,460	\$ 148	11%	\$ (117)	-8%
As a percentage of revenues	5%	5%	7%				

Research and development ("R&D") expenses consist primarily of personnel costs for our teams in engineering and research, manufacturing engineering and manufacturing test organizations, prototyping expense, contract and professional services and amortized equipment expense.

R&D expenses increased \$148 million, or 11%, in the year ended December 31, 2020 as compared to the year ended December 31, 2019. The increase was primarily due to a \$62 million increase in expensed materials as we continue to expand our product roadmap, \$61 million increase in stock-based compensation expense primarily related to the issuance of equity awards in fiscal year 2020 at higher grant date fair values due to our increased share price, \$20 million increase in facilities, freight and depreciation expenses and a \$20 million increase in employee and labor related expenses.

R&D expenses as a percentage of revenue decreased from 5.5% to 4.7% in the year ended December 31, 2020 as compared to the year ended December 31, 2019. The decrease is primarily an increase in total revenues from expanding sales, partially offset by an increase in our R&D expenses as detailed above.

Selling, General and Administrative Expense

(Dollars in millions)	Year Ended December 31,			2020 vs. 2019 Change		2019 vs. 2018 Change	
	2020	2019	2018	\$	%	\$	%
Selling, general and administrative	\$ 3,145	\$ 2,646	\$ 2,835	\$ 499	19%	\$ (189)	-7%
As a percentage of revenues	10%	11%	13%				

Selling, general and administrative (“SG&A”) expenses generally consist of personnel and facilities costs related to our stores, marketing, sales, executive, finance, human resources, information technology and legal organizations, as well as fees for professional and contract services and litigation settlements.

SG&A expenses increased \$499 million, or 19%, in the year ended December 31, 2020 as compared to the year ended December 31, 2019. The increase is primarily due to an increase of \$625 million in stock-based compensation expense, of which \$542 million was attributable to the 2018 CEO Performance Award. We recorded stock-based compensation expense of \$838 million in the year ended December 31, 2020 for the 2018 CEO Performance Award compared to \$296 million in the prior year. Of the expense recorded in fiscal year 2020, \$232 million was due to cumulative catch-up expense for the service provided from the grant date when three operational milestones under such award were considered probable of being met and the remaining unamortized expense of \$357 million for the first four tranches were recognized upon vesting as the first four market capitalization milestones were achieved (see Note 14, *Equity Incentive Plans*, to the consolidated financial statements included elsewhere in this Annual Report on Form 10-K). The remaining stock-based compensation expense increase of \$83 million attributable to other directors and employees is primarily related to the issuance of equity awards in fiscal year 2020 at higher grant date fair values due to our increased share price. The increase in stock-based compensation was partially offset by a decrease of \$90 million in customer promotional costs, facilities-related expenses and sales and marketing activities. Additionally, there was a reduction to operating expenses for costs previously incurred in the amount of \$43 million for the settlement in part of the securities litigation relating to the SolarCity acquisition (see Note 16, *Commitments and Contingencies—Legal Proceedings—Securities Litigation Relating to the SolarCity Acquisition*, to the consolidated financial statements included elsewhere in this Annual Report on Form 10-K).

SG&A expenses as a percentage of revenue decreased from 11% to 10% in year ended December 31, 2020 as compared to the year ended December 31, 2019. The decrease is primarily from an increase in total revenues from expanding sales, partially offset by an increase in our SG&A expenses as detailed above.

Restructuring and other

(Dollars in millions)	Year Ended December 31,			2020 vs. 2019 Change		2019 vs. 2018 Change	
	2020	2019	2018	\$	%	\$	%
Restructuring and other	\$ —	\$ 149	\$ 135	\$ (149)	-100%	\$ 14	10%
As a percentage of revenues	0%	1%	1%				

During the year ended December 31, 2019, we carried out certain restructuring actions in order to reduce costs and improve efficiency. There were no restructuring actions in the year ended December 31, 2020.

Interest Expense

(Dollars in millions)	Year Ended December 31,			2020 vs. 2019 Change		2019 vs. 2018 Change	
	2020	2019	2018	\$	%	\$	%
Interest expense	\$ (748)	\$ (685)	\$ (663)	\$ (63)	9%	\$ (22)	3%
As a percentage of revenues	2%	3%	3%				

Interest expense increased by \$63 million, or 9%, in the year ended December 31, 2020 as compared to the year ended December 31, 2019, primarily due to \$105 million of losses on extinguishment of debt in fiscal year 2020 from early conversions on our convertible senior notes, partially offset by a decrease in interest expense due to a decrease in our weighted average interest rate as compared to the prior year and an increase of \$17 million in the amount of interest we capitalized from the consolidated statements of operations to property, plant and equipment on the consolidated balance sheets. Increased capitalization results in lower interest expense. The amount of interest we capitalize is driven by our construction in progress balance, which increased year-over-year due to our construction and expansion of multiple factories.

Other Income (Expense), Net

(Dollars in millions)	Year Ended December 31,			2020 vs. 2019 Change		2019 vs. 2018 Change	
	2020	2019	2018	\$	%	\$	%
Other (expense) income, net	\$ (122)	\$ 45	\$ 22	\$ (167)	meaningful	\$ 23	105%
As a percentage of revenues	0%	0%	0%				

Other (expense) income, net, consists primarily of foreign exchange gains and losses related to our foreign currency-denominated monetary assets and liabilities and changes in the fair values of our fixed-for-floating interest rate swaps. We expect our foreign exchange gains and losses will vary depending upon movements in the underlying exchange rates.

Other (expense) income, net, changed unfavorably by \$167 million in the year ended December 31, 2020 as compared to the year ended December 31, 2019. The unfavorable change was primarily due to fluctuations in foreign currency exchange rates such as the U.S. dollar depreciating greater than 5% against the euro and the Chinese yuan in 2020 compared to an appreciation of 2% and 1% against the same currencies in the prior year, respectively.

Provision for Income Taxes

(Dollars in millions)	Year Ended December 31,			2020 vs. 2019 Change		2019 vs. 2018 Change	
	2020	2019	2018	\$	%	\$	%
Provision for income taxes	\$ 292	\$ 110	\$ 58	\$ 182	165%	\$ 52	90%
Effective tax rate	25%	-17%	-6%				

Our provision for income taxes increased by \$182 million, or 165%, in the year ended December 31, 2020 as compared to the year ended December 31, 2019. The increase was primarily due to the substantial increases in taxable profits in our foreign jurisdictions year-over-year.

Our effective tax rate increased from -17% to 25% in the year ended December 31, 2020 as compared to the prior year, primarily due to substantial pre-tax income in the year ended December 31, 2020 as compared to a pre-tax loss for the year ended December 31, 2019.

Net Income (Loss) Attributable to Noncontrolling Interests and Redeemable Noncontrolling Interests

(Dollars in millions)	Year Ended December 31,			2020 vs. 2019 Change		2019 vs. 2018 Change	
	2020	2019	2018	\$	%	\$	%
Net income (loss) attributable to noncontrolling interests and redeemable noncontrolling interests in subsidiaries	\$ 141	\$ 87	\$ (87)	\$ 54	62%	\$ 174	Not meaningful

Our net income (loss) attributable to noncontrolling interests and redeemable noncontrolling interests was related to financing fund arrangements.

Net income (loss) attributable to noncontrolling interests and redeemable noncontrolling interests increased by \$54 million, or 62%, in the year ended December 31, 2020 as compared to the year ended December 31, 2019. The increase was primarily due to lower activities from new financing fund arrangements.

Liquidity and Capital Resources

As of December 31, 2020, we had \$19.38 billion of cash and cash equivalents. Balances held in foreign currencies had a U.S. dollar equivalent of \$6.76 billion and consisted primarily of euros, Chinese yuan and Canadian dollars. Our sources of cash are

predominantly from our deliveries of vehicles, sales and installations of our energy storage products and solar energy systems, proceeds from debt facilities, proceeds from financing funds and proceeds from equity offerings.

Our sources of liquidity and cash flows enable us to fund ongoing operations, research and development projects for new products and technologies including our announced proprietary battery cells, ongoing production and additional manufacturing ramps at existing manufacturing facilities such as the Fremont Factory, Gigafactory Nevada, Gigafactory Shanghai and Gigafactory New York, the construction of Gigafactory Berlin and Gigafactory Texas, and the continued expansion of our retail and service locations, body shops, Mobile Service fleet, Supercharger network and energy product installation capabilities.

As discussed in and subject to the considerations referenced in Part II, Item 7, *Management's Discussion and Analysis of Financial Condition and Results of Operations—Management Opportunities, Challenges and Risks and 2021 Outlook—Cash Flow and Capital Expenditure Trends* in this Annual Report on Form 10-K, we currently expect our capital expenditures to be \$4.50 to \$6.00 billion in 2021 and in each of the next two fiscal years.

We expect that the cash we generate from our core operations will generally be sufficient to cover our future capital expenditures and to pay down our near-term debt obligations, although we may choose to seek alternative financing sources. For example, our local subsidiary has entered into credit facilities to support construction and production at Gigafactory Shanghai. See Note 12, *Debt*, to the consolidated financial statements included elsewhere in this Annual Report on Form 10-K. As always, we continually evaluate our capital expenditure needs and may decide it is best to raise additional capital to fund the rapid growth of our business.

In January 2021, we updated our investment policy to provide us with more flexibility to further diversify and maximize returns on our cash that is not required to maintain adequate operating liquidity. As part of the policy, we may invest a portion of such cash in certain specified alternative reserve assets. Thereafter, we invested an aggregate \$1.50 billion in bitcoin under this policy. Moreover, we expect to begin accepting bitcoin as a form of payment for our products in the near future, subject to applicable laws and initially on a limited basis, which we may or may not liquidate upon receipt. We believe our bitcoin holdings are highly liquid. However, digital assets may be subject to volatile market prices, which may be unfavorable at the time when we want or need to liquidate them.

We have an agreement to spend or incur \$5.0 billion in combined capital, operational expenses, costs of goods sold and other costs in the State of New York during the 10-year period beginning April 30, 2018, which we expect to meet through our operations. As we temporarily suspended most of our manufacturing operations at Gigafactory New York pursuant to a New York State executive order issued in March 2020 as a result of the COVID-19 pandemic, we were granted a one-year deferral of our obligation to be compliant as of April 30, 2020 with our applicable targets under such agreement.

We expect that our current sources of liquidity together with our projection of cash flows from operating activities will provide us with adequate liquidity over at least the next 12 months, even considering the expected levels of capital expenditures in the current and next two fiscal years. A large portion of our future expenditures is to fund our growth, and we can adjust our capital and operating expenditures by operating segment, including future expansion of our product offerings, retail and service locations, body shops, Mobile Service fleet, and Supercharger network. For example, if our near-term manufacturing operations decrease in scale or ramp more slowly than expected, including due to global economic conditions and levels of consumer outlook and spend impacting demand in the worldwide transportation, automotive and energy product industries, we may choose to correspondingly slow the pace of our capital expenditures. We may need or want to raise additional funds in the future, and these funds may not be available to us when we need or want them, or at all. If we cannot raise additional funds when we need or want them, our operations and prospects could be negatively affected.

In addition, we had \$2.63 billion of unused committed amounts under our credit facilities and financing funds as of December 31, 2020, some of which are subject to satisfying specified conditions prior to draw-down (such as pledging to our lenders sufficient amounts of qualified receivables, inventories, leased vehicles and our interests in those leases, solar energy systems and the associated customer contracts, our interests in financing funds or various other assets; and contributing or selling qualified solar energy systems and the associated customer contracts or qualified leased vehicles and our interests in those leases into the financing funds). For details regarding our indebtedness and financing funds, refer to Note 12, *Debt*, and Note 17, *Variable Interest Entity Arrangements* to the consolidated financial statements included elsewhere in this Annual Report on Form 10-K.

Summary of Cash Flows

(Dollars in millions)

	Year Ended December 31,		
	2020	2019	2018
Net cash provided by operating activities	\$ 5,943	\$ 2,405	\$ 2,098
Net cash used in investing activities	\$ (3,132)	\$ (1,436)	\$ (2,337)
Net cash provided by financing activities	\$ 9,973	\$ 1,529	\$ 574

Cash Flows from Operating Activities

Our cash flows from operating activities are significantly affected by our cash investments to support the growth of our business in areas such as research and development and selling, general and administrative and working capital, especially inventory, which includes vehicles in transit. Our operating cash inflows include cash from vehicle sales, customer lease payments, customer deposits, cash from sales of regulatory credits and energy generation and storage products. These cash inflows are offset by our payments to suppliers for production materials and parts used in our manufacturing process, operating expenses, operating lease payments and interest payments on our financings.

Net cash provided by operating activities increased by \$3.54 billion to \$5.94 billion during the year ended December 31, 2020 from \$2.40 billion during the year ended December 31, 2019. This increase was primarily due to the increase in net income excluding non-cash expenses and gains of \$2.82 billion, the decrease in net operating assets and liabilities of \$533 million and \$188 million of the repayment of our 0.25% Convertible Senior Notes due in 2019 during the three months ended March 31, 2019 (which represents the portion of the repayment that was classified as an operating activity, as this represented an interest payment on the deeply-discounted convertible senior notes). The decrease in our net operating assets and liabilities was mainly driven by a larger increase in accounts payable and accrued liabilities in the year ended December 31, 2020 as compared to the prior year from ramp up in production at the Fremont Factory and Gigafactory Shanghai. The decrease in our net operating assets and liabilities was partially offset by a smaller increase in deferred revenue primarily due to delivery of regulatory credits in 2020 under a previous arrangement where we had received payment in advance as of December 31, 2019, a larger increase in operating lease vehicles as Model 3 direct leasing was introduced in the second quarter of 2019 and Model Y direct leasing was introduced in the third quarter of 2020, and a larger increase in accounts receivables of government rebates already passed through to customers.

Cash Flows from Investing Activities

Cash flows from investing activities and their variability across each period related primarily to capital expenditures, which were \$3.16 billion for the year ended December 31, 2020, mainly for Model Y production expansion at the Fremont Factory, expansion of Gigafactory Shanghai and construction of Gigafactory Berlin and Gigafactory Texas, and \$1.33 billion for the year ended December 31, 2019, mainly for Gigafactory Shanghai construction, Model 3 production ramp and Model Y preparations. The increase in capital expenditures was partially offset by decreases of \$32 million in business combinations, net of cash acquired, and \$30 million of design, acquisition and installation of solar energy systems when compared to the prior year. Additionally, we received \$123 million and \$46 million, respectively, of government grants in connection with us making certain manufacturing equipment investments at Gigafactory Shanghai for the years ended December 31, 2020 and 2019, respectively.

Cash Flows from Financing Activities

Cash flows from financing activities during the year ended December 31, 2020 consisted primarily of \$12.27 billion from issuance of common stock in public offerings in 2020, net of issuance costs, and \$417 million of proceeds from exercise of stock options and other stock issuances. These cash inflows were partially offset by \$1.99 billion of cash repayments upon early conversions of our convertible senior notes, \$338 million principal repayments of our finance leases, collateralized lease repayments of \$240 million and \$219 million net payments to financing fund investors. See Note 12, *Debt*, and Note 2, *Summary of Significant Accounting Policies*, to the consolidated financial statements included elsewhere in this Annual Report on Form 10-K for further details regarding our debt obligations and collateralized borrowings, respectively.

Cash flows from financing activities during the year ended December 31, 2019 consisted primarily of \$1.82 billion from the issuance of the 2.00% Convertible Senior Notes due in 2024 ("2024 Notes"), net of transaction costs, and \$848 million from the issuance of common stock, net of underwriting discounts, in registered public offerings, \$736 million of net borrowings under loan agreements entered into by certain Chinese subsidiaries, \$394 million of net borrowings for automotive asset-backed notes and \$174 million from the issuance of warrants in connection with the offering of the 2024 Notes. These cash inflows were partially offset by a \$732 million portion of the repayment of our 0.25% Convertible Senior Notes due in 2019 that was classified as financing activity, a \$566 million repayment of our 1.625% Convertible Senior Notes due in 2019, a purchase of convertible note hedges of \$476 million in connection with the offering of the 2024 Notes and collateralized lease repayments of \$389 million.

Contractual Obligations

We are party to contractual obligations involving commitments to make payments to third parties, including certain debt financing arrangements and leases, primarily for stores, service centers, certain manufacturing facilities and certain corporate offices. These also include, as part of our normal business practices, contracts with suppliers for purchases of certain raw materials, components and services to facilitate adequate supply of these materials and services and capacity reservation contracts. The following table sets forth, as of December 31, 2020, certain significant obligations that will affect our future liquidity (in millions):

	Total	Year Ended December 31,					Thereafter
		2021	2022	2023	2024	2025	
Operating lease obligations, including imputed interest	\$ 1,846	\$ 366	\$ 327	\$ 279	\$ 245	\$ 204	\$ 425
Finance lease obligations, including imputed interest	1,635	462	446	412	299	9	7
Purchase obligations (1)	18,318	10,483	2,743	2,280	1,877	865	70
Debt, including scheduled interest (2)	11,695	2,100	2,172	2,602	2,021	2,109	691
Total	<u>\$ 33,494</u>	<u>\$ 13,411</u>	<u>\$ 5,688</u>	<u>\$ 5,573</u>	<u>\$ 4,442</u>	<u>\$ 3,187</u>	<u>\$ 1,193</u>

- (1) These amounts represent (i) purchase orders of \$5.95 billion issued under binding and enforceable agreements with all vendors as of December 31, 2020 and (ii) \$12.37 billion in other estimable purchase obligations pursuant to such agreements, primarily relating to the purchase of lithium-ion cells produced by Panasonic at Gigafactory Nevada, including any additional amounts we may have to pay vendors if we do not meet certain minimum purchase obligations. In cases where no purchase orders were outstanding under binding and enforceable agreements as of December 31, 2020, we have included estimated amounts based on our best estimates and assumptions or discussions with the relevant vendors as of such date or, where applicable, on amounts or assumptions included in such agreements for purposes of discussion or reference. In certain cases, such estimated amounts were subject to contingent events. Furthermore, these amounts do not include future payments for purchase obligations that were recorded in accounts payable or accrued liabilities as of December 31, 2020.
- (2) This includes non-recourse debt repayments, including scheduled interest, of \$5.16 billion. Non-recourse debt refers to debt that is recourse to only assets of our subsidiaries. Short-term scheduled interest payments and amortization of convertible senior note conversion features, debt discounts and deferred financing costs for the year ended December 31, 2020 is \$342 million. Long-term scheduled interest payments and amortization of convertible senior note conversion features, debt discounts and deferred financing costs for the years thereafter is \$1.13 billion.

The table above excludes unrecognized tax benefits of \$353 million because if recognized, they would be an adjustment to our deferred tax assets.

We offer resale value guarantees or similar buyback terms to certain customers who purchase and finance their vehicles through one of our specified commercial banking partners and certain leasing partners (refer to *Automotive Sales with Resale Value Guarantee or a Buyback Option* in Note 2, *Significant Accounting Policies*, to the consolidated financial statements included elsewhere in this Annual Report on Form 10-K). The maximum amount we could be required to pay under these programs, should customers exercise their resale value guarantees or buyback options, would be \$1.84 billion over the next five years, of which \$394 million is within a 12-month period from December 31, 2020. We have not included this in the table above as it is unknown how many customers will exercise their options. Additionally, we plan to resell any vehicles which are returned to us and therefore, the actual exposure to us is deemed to be limited.

Off-Balance Sheet Arrangements

During the periods presented, we did not have relationships with unconsolidated entities or financial partnerships, such as entities often referred to as structured finance or special purpose entities, which were established for the purpose of facilitating off-balance sheet arrangements or other contractually narrow or limited purposes.

Recent Accounting Pronouncements

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

ITEM 7A. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK**Foreign Currency Risk**

We transact business globally in multiple currencies and hence have foreign currency risks related to our revenue, costs of revenue, operating expenses and localized subsidiary debt denominated in currencies other than the U.S. dollar (primarily the Chinese yuan, euro, Canadian dollar and British pound in relation to our current year operations). In general, we are a net receiver of currencies other than the U.S. dollar for our foreign subsidiaries. Accordingly, changes in exchange rates affect our revenue and other operating results as expressed in U.S. dollars as we do not typically hedge foreign currency risk.

We have also experienced, and will continue to experience, fluctuations in our net income (loss) as a result of gains (losses) on the settlement and the re-measurement of monetary assets and liabilities denominated in currencies that are not the local currency (primarily consisting of our intercompany and cash and cash equivalents balances). For the year ended December 31, 2020, we recognized a net foreign currency loss of \$114 million in other (expense) income, net, with our largest re-measurement exposures from the U.S. dollar, euro and Canadian dollar as our subsidiaries' monetary assets and liabilities are denominated in various local currencies. For the year ended December 31, 2019, we recognized a net foreign currency gain of \$48 million in other (expense) income, net, with our largest re-measurement exposures from the U.S. dollar, British pound and Canadian dollar.

We considered the historical trends in foreign currency exchange rates and determined that it is reasonably possible that adverse changes in foreign currency exchange rates of 10% for all currencies could be experienced in the near-term. These changes were applied to our total monetary assets and liabilities denominated in currencies other than our local currencies at the balance sheet date to compute the impact these changes would have had on our net income (loss) before income taxes. These changes would have resulted in a benefit of \$8 million at December 31, 2020 and an adverse impact of \$362 million at December 31, 2019 assuming no foreign currency hedging.

Interest Rate Risk

We are exposed to interest rate risk on our borrowings that bear interest at floating rates. Pursuant to our risk management policies, in certain cases, we utilize derivative instruments to manage some of this risk. We do not enter into derivative instruments for trading or speculative purposes. A hypothetical 10% change in interest rates on our floating rate debt would have increased or decreased our interest expense for the years ended December 31, 2020 and 2019 by \$4 million and \$8 million, respectively.

ITEM 8. FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA**Index to Consolidated Financial Statements**

	<u>Page</u>
Report of Independent Registered Public Accounting Firm	51
Consolidated Balance Sheets	54
Consolidated Statements of Operations	55
Consolidated Statements of Comprehensive Income (Loss)	56
Consolidated Statements of Redeemable Noncontrolling Interests and Equity	57
Consolidated Statements of Cash Flows	58
Notes to Consolidated Financial Statements	59

Report of Independent Registered Public Accounting Firm

To the Board of Directors and Stockholders of Tesla, Inc.

Opinions on the Financial Statements and Internal Control over Financial Reporting

We have audited the accompanying consolidated balance sheets of Tesla, Inc. and its subsidiaries (the “Company”) as of December 31, 2020 and 2019, and the related consolidated statements of operations, of comprehensive income (loss), of redeemable noncontrolling interests and equity and of cash flows for each of the three years in the period ended December 31, 2020, including the related notes (collectively referred to as the “consolidated financial statements”). We also have audited the Company's internal control over financial reporting as of December 31, 2020, based on criteria established in *Internal Control - Integrated Framework* (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO).

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the financial position of the Company as of December 31, 2020 and 2019, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2020 in conformity with accounting principles generally accepted in the United States of America. Also in our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2020, based on criteria established in *Internal Control - Integrated Framework* (2013) issued by the COSO.

Changes in Accounting Principles

As discussed in Note 2 to the consolidated financial statements, the Company changed the manner in which it accounts for leases in 2019 and the manner in which it accounts for revenue from contracts with customers in 2018.

Basis for Opinions

The Company's management is responsible for these consolidated financial statements, for maintaining effective internal control over financial reporting, and for its assessment of the effectiveness of internal control over financial reporting, included in Management's Report on Internal Control over Financial Reporting appearing under Item 9A. Our responsibility is to express opinions on the Company's consolidated financial statements and on the Company's internal control over financial reporting based on our audits. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) (PCAOB) and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audits to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement, whether due to error or fraud, and whether effective internal control over financial reporting was maintained in all material respects.

Our audits of the consolidated financial statements included performing procedures to assess the risks of material misstatement of the consolidated 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 consolidated 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 consolidated financial statements. Our audit of internal control over financial reporting included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. Our audits also included performing such other procedures as we considered necessary in the circumstances. We believe that our audits provide a reasonable basis for our opinions.

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 (i) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (ii) 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 (iii) 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.

Critical Audit Matters

The critical audit matters communicated below are matters arising from the current period audit of the consolidated financial statements that were communicated or required to be communicated to the audit committee and that (i) relate to accounts or disclosures that are material to the consolidated financial statements and (ii) 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.

Automotive Sales To Customers With a Resale Value Guarantee or Buyback Option

As described in Note 2 to the consolidated financial statements, the sales return reserve related to resale value guarantees or buyback options was \$703 million as of December 31, 2020, of which \$202 million was short-term. The Company offers some customers resale value guarantees or buyback options. Under these programs, the Company receives full payment for the vehicle sales price at the time of delivery and the customer has the option of selling their vehicle back to the Company during the guarantee period for a pre-determined resale value. In circumstances where management does not believe the customer has a significant economic incentive to exercise the resale value guarantee or buyback option provided to them at contract inception, the Company recognizes revenue when control transfers upon delivery to a customer as a sale with a right of return. In circumstances where management believes the customer has a significant economic incentive to exercise the resale value guarantee or buyback option at contract inception, the Company recognizes the transaction as an operating lease. Management's determination of whether there is a significant economic incentive includes comparing a vehicle's estimated market value at the time the option is exercisable with the guaranteed resale value. Sales return reserves are estimated based on historical experience plus consideration for expected future market values. On a quarterly basis, management assesses the estimated future market values of vehicles under these programs, taking into account price adjustments on vehicle offerings and changes in market conditions subsequent to the initial sale to determine the need for changes to the reserve.

The principal considerations for our determination that performing procedures relating to automotive sales to customers with a resale value guarantee or buyback option is a critical audit matter are the significant judgment by management in determining the sales return reserve when customers do not have a significant economic incentive to exercise their option; this in turn led to a high degree of auditor judgment, subjectivity, and effort in performing procedures and evaluating audit evidence related to the sales return reserve when customers do not have a significant economic incentive.

Addressing the matter involved performing procedures and evaluating audit evidence in connection with forming our overall opinion on the consolidated financial statements. These procedures included testing the effectiveness of controls relating to automotive revenue recognition for sales to customers with a resale value guarantee or buyback option as well as the related sales return reserve, including controls over management's estimate of expected future market values and historical experience. These procedures also included, among others, testing management's process for determining whether customers have a significant economic incentive to exercise their put rights under the resale value guarantee and buyback option programs and, if not, the related sales return reserve. This included evaluating the appropriateness of the model applied and the reasonableness of significant assumptions related to historical experience and the estimated expected future market values used in the comparison to guaranteed resale amounts. Evaluating assumptions related to historical experience and estimated expected future market values involved evaluating whether the assumptions used were reasonable considering current and past performance and consistency with evidence obtained in other areas of the audit. Procedures were performed to evaluate the reliability, completeness and relevance of management's data used in the development of the historical experience assumption.

Automotive Warranty Reserve

As described in Note 2 to the consolidated financial statements, total accrued warranty, which primarily relates to the automotive segment, was \$1,468 million as of December 31, 2020. The Company provides a manufacturer's warranty on all new and used Tesla vehicles. As described in Note 2, a warranty reserve is accrued for these products sold, which includes management's best estimate of the projected costs to repair or replace items under warranty, including recalls when identified. These estimates are based on actual claims incurred to date and an estimate of the nature, frequency and costs of future claims.

The principal considerations for our determination that performing procedures relating to the automotive warranty reserve is a critical audit matter are the significant judgment by management in determining the warranty reserve; this in turn led to significant auditor judgment, subjectivity, and effort in performing procedures to evaluate the estimate of the nature, frequency and costs of future claims, and the audit effort involved the use of professionals with specialized skill and knowledge.

Addressing the matter involved performing procedures and evaluating audit evidence in connection with forming our overall opinion on the consolidated financial statements. These procedures included testing the effectiveness of controls relating to management's estimate of the automotive warranty reserve, including controls over management's estimate of the nature, frequency and costs of future claims as well as the completeness and accuracy of actual claims incurred to date. These procedures also included, among others, testing management's process for determining the automotive warranty reserve. This included evaluating the appropriateness of the model applied and the reasonableness of significant assumptions related to the nature and frequency of future claims and the related costs to repair or replace items under warranty. Evaluating the assumptions related to the nature and frequency of future claims and the related costs to repair or replace items under warranty involved evaluating whether the assumptions used were reasonable considering current and past performance, including a lookback analysis comparing prior period forecasted claims to actual claims incurred. These procedures also included developing an independent estimate of a portion of the warranty accrual, comparing the independent estimate to management's estimate to evaluate the reasonableness of the estimate, and testing the completeness and accuracy of historical vehicle claims. Procedures were performed to test the reliability, completeness, and relevance of management's data related to the historical claims processed and that such claims were appropriately used by management in the estimation of future claims. Professionals with specialized skill and knowledge were used to assist in evaluating the appropriateness of aspects of management's model for estimating the nature and frequency of future claims, and testing management's warranty reserve for a portion of future warranty claims.

/s/ PricewaterhouseCoopers LLP

San Jose, California
February 8, 2021

We have served as the Company's auditor since 2005.

Tesla, Inc.
Consolidated Balance Sheets
(in millions, except per share data)

	December 31, 2020	December 31, 2019
Assets		
Current assets		
Cash and cash equivalents	\$ 19,384	\$ 6,268
Accounts receivable, net	1,886	1,324
Inventory	4,101	3,552
Prepaid expenses and other current assets	1,346	959
Total current assets	<u>26,717</u>	<u>12,103</u>
Operating lease vehicles, net	3,091	2,447
Solar energy systems, net	5,979	6,138
Property, plant and equipment, net	12,747	10,396
Operating lease right-of-use assets	1,558	1,218
Intangible assets, net	313	339
Goodwill	207	198
Other non-current assets	1,536	1,470
Total assets	<u>\$ 52,148</u>	<u>\$ 34,309</u>
Liabilities		
Current liabilities		
Accounts payable	\$ 6,051	\$ 3,771
Accrued liabilities and other	3,855	3,222
Deferred revenue	1,458	1,163
Customer deposits	752	726
Current portion of debt and finance leases	2,132	1,785
Total current liabilities	<u>14,248</u>	<u>10,667</u>
Debt and finance leases, net of current portion	9,556	11,634
Deferred revenue, net of current portion	1,284	1,207
Other long-term liabilities	3,330	2,691
Total liabilities	<u>28,418</u>	<u>26,199</u>
Commitments and contingencies (Note 16)		
Redeemable noncontrolling interests in subsidiaries	604	643
Convertible senior notes (Note 12)	51	—
Equity		
Stockholders' equity		
Preferred stock; \$0.001 par value; 100 shares authorized; no shares issued and outstanding	—	—
Common stock; \$0.001 par value; 2,000 shares authorized; 960 and 905 shares issued and outstanding as of December 31, 2020 and December 31, 2019, respectively (1)	1	1
Additional paid-in capital (1)	27,260	12,736
Accumulated other comprehensive income (loss)	363	(36)
Accumulated deficit	(5,399)	(6,083)
Total stockholders' equity	<u>22,225</u>	<u>6,618</u>
Noncontrolling interests in subsidiaries	850	849
Total liabilities and equity	<u>\$ 52,148</u>	<u>\$ 34,309</u>

- (1) Prior period results have been adjusted to reflect the five-for-one stock split effected in the form of a stock dividend in August 2020. See Note 1, *Overview*, for details.

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

Tesla, Inc.
Consolidated Statements of Operations
(in millions, except per share data)

	Year Ended December 31,		
	2020	2019	2018
Revenues			
Automotive sales	\$ 26,184	\$ 19,952	\$ 17,632
Automotive leasing	1,052	869	883
Total automotive revenues	27,236	20,821	18,515
Energy generation and storage	1,994	1,531	1,555
Services and other	2,306	2,226	1,391
Total revenues	31,536	24,578	21,461
Cost of revenues			
Automotive sales	19,696	15,939	13,686
Automotive leasing	563	459	488
Total automotive cost of revenues	20,259	16,398	14,174
Energy generation and storage	1,976	1,341	1,365
Services and other	2,671	2,770	1,880
Total cost of revenues	24,906	20,509	17,419
Gross profit	6,630	4,069	4,042
Operating expenses			
Research and development	1,491	1,343	1,460
Selling, general and administrative	3,145	2,646	2,835
Restructuring and other	—	149	135
Total operating expenses	4,636	4,138	4,430
Income (loss) from operations	1,994	(69)	(388)
Interest income	30	44	24
Interest expense	(748)	(685)	(663)
Other (expense) income, net	(122)	45	22
Income (loss) before income taxes	1,154	(665)	(1,005)
Provision for income taxes	292	110	58
Net income (loss)	862	(775)	(1,063)
Net income (loss) attributable to noncontrolling interests and redeemable noncontrolling interests in subsidiaries	141	87	(87)
Net income (loss) attributable to common stockholders	\$ 721	\$ (862)	\$ (976)
Less: Buy-out of noncontrolling interest	31	8	—
Net income (loss) used in computing net income (loss) per share of common stock	\$ 690	\$ (870)	\$ (976)
Net income (loss) per share of common stock attributable to common stockholders (1)			
Basic	\$ 0.74	\$ (0.98)	\$ (1.14)
Diluted	\$ 0.64	\$ (0.98)	\$ (1.14)
Weighted average shares used in computing net income (loss) per share of common stock (1)			
Basic	933	887	853
Diluted	1,083	887	853

- (1) Prior period results have been adjusted to reflect the five-for-one stock split effected in the form of a stock dividend in August 2020. See Note 1, *Overview*, for details.

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

Tesla, Inc.
Consolidated Statements of Comprehensive Income (Loss)
(in millions)

	Year Ended December 31,		
	2020	2019	2018
Net income (loss)	\$ 862	\$ (775)	\$ (1,063)
Other comprehensive income (loss):			
Foreign currency translation adjustment	399	(28)	(42)
Comprehensive income (loss)	1,261	(803)	(1,105)
Less: Comprehensive income (loss) attributable to noncontrolling interests and redeemable noncontrolling interests in subsidiaries	141	87	(87)
Comprehensive income (loss) attributable to common stockholders	<u>\$ 1,120</u>	<u>\$ (890)</u>	<u>\$ (1,018)</u>

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

Tesla, Inc.

Consolidated Statements of Redeemable Noncontrolling Interests and Equity
(in millions, except per share data)

	Redeemable Noncontrolling	Common Stock		Additional Paid-In	Accumulated	Accumulated Other Comprehensive	Total Stockholders'	Noncontrolling Interests in	Total
	Interests	Shares (1)	Amount (1)	Capital (1)	Deficit	Income (Loss)	Equity	Subsidiaries	Equity
Balance as of December 31, 2017	\$ 398	844	\$ 1	\$ 9,177	\$ (4,974)	\$ 33	\$ 4,237	\$ 997	\$ 5,234
Adjustments for prior periods from adopting ASC 606	8	—	—	—	623	—	623	(89)	534
Adjustments for prior periods from adopting Accounting Standards Update No. 2017-05	—	—	—	—	9	—	9	—	9
Exercises of conversion feature of convertible senior notes	—	1	0	0	—	—	0	—	0
Issuance of common stock for equity incentive awards	—	18	0	296	—	—	296	—	296
Stock-based compensation	—	—	—	775	—	—	775	—	775
Contributions from noncontrolling interests	276	—	—	—	—	—	—	161	161
Distributions to noncontrolling interests	(61)	—	—	—	—	—	—	(210)	(210)
Other	(3)	—	—	—	—	—	—	—	—
Net loss	(62)	—	—	—	(976)	—	(976)	(25)	(1,001)
Other comprehensive loss	—	—	—	—	—	(41)	(41)	—	(41)
Balance as of December 31, 2018	\$ 556	863	\$ 1	\$ 10,248	\$ (5,318)	\$ (8)	\$ 4,923	\$ 834	\$ 5,757
Adjustments for prior periods from adopting ASC 842	—	—	—	—	97	—	97	—	97
Conversion feature of 2.00% Convertible Senior Notes due in 2024 ("2024 Notes")	—	—	—	491	—	—	491	—	491
Purchase of convertible note hedges	—	—	—	(476)	—	—	(476)	—	(476)
Sales of warrants	—	—	—	174	—	—	174	—	174
Issuance of common stock for equity incentive awards and acquisitions, net of transaction costs	—	24	0	482	—	—	482	—	482
Issuance of common stock in May 2019 public offering at \$48.60 per share (1), net of issuance costs of \$15	—	18	0	848	—	—	848	—	848
Stock-based compensation	—	—	—	973	—	—	973	—	973
Contributions from noncontrolling interests	105	—	—	—	—	—	—	174	174
Distributions to noncontrolling interests	(65)	—	—	—	—	—	—	(198)	(198)
Other	(1)	—	—	(4)	—	—	(4)	—	(4)
Net income (loss)	48	—	—	—	(862)	—	(862)	39	(823)
Other comprehensive loss	—	—	—	—	—	(28)	(28)	—	(28)
Balance as of December 31, 2019	\$ 643	905	\$ 1	\$ 12,736	\$ (6,083)	\$ (36)	\$ 6,618	\$ 849	\$ 7,467
Adjustments for prior periods from adopting ASU 2016-13	—	—	—	—	(37)	—	(37)	—	(37)
Reclassification between equity and mezzanine equity for convertible senior notes	—	—	—	(51)	—	—	(51)	—	(51)
Exercises of conversion feature of convertible senior notes	—	2	0	59	—	—	59	—	59
Issuance of common stock for equity incentive awards	—	19	0	417	—	—	417	—	417
Issuance of common stock in public offerings, net of issuance costs of \$68 (1)	—	34	0	12,269	—	—	12,269	—	12,269
Stock-based compensation	—	—	—	1,861	—	—	1,861	—	1,861
Contributions from noncontrolling interests	7	—	—	—	—	—	—	17	17
Distributions to noncontrolling interests	(67)	—	—	—	—	—	—	(132)	(132)
Buy-outs of noncontrolling interests	(4)	—	—	(31)	—	—	(31)	—	(31)
Net income	25	—	—	—	721	—	721	116	837
Other comprehensive income	—	—	—	—	—	399	399	—	399
Balance as of December 31, 2020	\$ 604	960	\$ 1	\$ 27,260	\$ (5,399)	\$ 363	\$ 22,225	\$ 850	\$ 23,075

(1) Prior period results have been adjusted to reflect the five-for-one stock split effected in the form of a stock dividend in August 2020. See Note 1, *Overview*, for details regarding stock split and public offerings.

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

Tesla, Inc.
Consolidated Statements of Cash Flows
(in millions)

	Year Ended December 31,		
	2020	2019	2018
Cash Flows from Operating Activities			
Net income (loss)	\$ 862	\$ (775)	\$ (1,063)
Adjustments to reconcile net income (loss) to net cash provided by operating activities:			
Depreciation, amortization and impairment	2,322	2,154	1,901
Stock-based compensation	1,734	898	749
Amortization of debt discounts and issuance costs	180	188	159
Inventory and purchase commitments write-downs	202	193	85
Loss on disposals of fixed assets	117	146	162
Foreign currency transaction net loss (gain)	114	(48)	(2)
Non-cash interest and other operating activities	228	186	49
Operating cash flow related to repayment of discounted convertible senior notes	—	(188)	—
Changes in operating assets and liabilities, net of effect of business combinations:			
Accounts receivable	(652)	(367)	(497)
Inventory	(422)	(429)	(1,023)
Operating lease vehicles	(1,072)	(764)	(215)
Prepaid expenses and other current assets	(251)	(288)	(82)
Other non-current assets	(344)	115	(207)
Accounts payable and accrued liabilities	2,102	646	1,797
Deferred revenue	321	801	406
Customer deposits	7	(58)	(96)
Other long-term liabilities	495	(5)	(25)
Net cash provided by operating activities	5,943	2,405	2,098
Cash Flows from Investing Activities			
Purchases of property and equipment excluding finance leases, net of sales	(3,157)	(1,327)	(2,101)
Purchases of solar energy systems, net of sales	(75)	(105)	(218)
Receipt of government grants	123	46	—
Purchase of intangible assets	(10)	(5)	—
Business combinations, net of cash acquired	(13)	(45)	(18)
Net cash used in investing activities	(3,132)	(1,436)	(2,337)
Cash Flows from Financing Activities			
Proceeds from issuances of common stock in public offerings, net of issuance costs	12,269	848	—
Proceeds from issuances of convertible and other debt	9,713	10,669	6,176
Repayments of convertible and other debt	(11,623)	(9,161)	(5,247)
Repayments of borrowings issued to related parties	—	—	(100)
Collateralized lease repayments	(240)	(389)	(559)
Proceeds from exercises of stock options and other stock issuances	417	263	296
Principal payments on finance leases	(338)	(321)	(181)
Debt issuance costs	(6)	(37)	(15)
Purchase of convertible note hedges	—	(476)	—
Proceeds from issuance of warrants	—	174	—
Proceeds from investments by noncontrolling interests in subsidiaries	24	279	437
Distributions paid to noncontrolling interests in subsidiaries	(208)	(311)	(227)
Payments for buy-outs of noncontrolling interests in subsidiaries	(35)	(9)	(6)
Net cash provided by financing activities	9,973	1,529	574
Effect of exchange rate changes on cash and cash equivalents and restricted cash	334	8	(23)
Net increase in cash and cash equivalents and restricted cash	13,118	2,506	312
Cash and cash equivalents and restricted cash, beginning of period	6,783	4,277	3,965
Cash and cash equivalents and restricted cash, end of period	\$ 19,901	\$ 6,783	\$ 4,277
Supplemental Non-Cash Investing and Financing Activities			
Equity issued in connection with business combination	\$ —	\$ 207	\$ —
Acquisitions of property and equipment included in liabilities	\$ 1,088	\$ 562	\$ 249
Estimated fair value of facilities under build-to-suit leases	\$ —	\$ —	\$ 94
Supplemental Disclosures			
Cash paid during the period for interest, net of amounts capitalized	\$ 444	\$ 455	\$ 381
Cash paid during the period for taxes, net of refunds	\$ 115	\$ 54	\$ 35

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

Tesla, Inc.**Notes to Consolidated Financial Statements****Note 1 – Overview**

Tesla, Inc. (“Tesla”, the “Company”, “we”, “us” or “our”) was incorporated in the State of Delaware on July 1, 2003. We design, develop, manufacture and sell high-performance fully electric vehicles and design, manufacture, install and sell solar energy generation and energy storage products. Our Chief Executive Officer, as the chief operating decision maker (“CODM”), organizes our company, manages resource allocations and measures performance among two operating and reportable segments: (i) automotive and (ii) energy generation and storage.

As of and following December 31, 2020, there has continued to be widespread impact from the coronavirus disease (“COVID-19”) pandemic. In 2020, we temporarily suspended operations at each of our manufacturing facilities worldwide for a part of the first half of the year. Some of our suppliers and partners also experienced temporary suspensions before resuming, including Panasonic, which manufactures battery cells for our products at our Gigafactory Nevada. We also instituted temporary employee furloughs and compensation reductions while our U.S. operations were scaled back. Finally, reduced operations or closures at motor vehicle departments, vehicle auction houses and municipal and utility company inspectors resulted in challenges in or postponements for our new vehicle deliveries, used vehicle sales, and energy product deployments. By the second half of 2020, however, we resumed operations at all of our manufacturing facilities and have continued to increase our output and add additional capacity and work with each of our suppliers and government agencies on meeting, ramping and sustaining our production. On the other hand, certain government regulations and shifting social behaviors have continued to limit or close non-essential transportation, government functions, business activities and person-to-person interactions. In some cases, the relaxation of such trends has recently been followed by actual or contemplated returns to stringent restrictions on gatherings or commerce. We cannot predict the duration or direction of such trends, which have also adversely affected and may in the future affect our operations.

On February 19, 2020, we completed a public offering of our common stock and issued a total of 15.2 million shares (as adjusted to give effect to the Stock Split, as described in the paragraph below), for total cash proceeds of \$2.31 billion, net of underwriting discounts and offering costs of \$28 million.

On August 10, 2020, our Board of Directors declared a five-for-one split of the Company’s common stock effected in the form of a stock dividend (the “Stock Split”). Each stockholder of record on August 21, 2020 received a dividend of four additional shares of common stock for each then-held share, distributed after close of trading on August 28, 2020. All share and per share amounts presented herein have been retroactively adjusted to reflect the impact of the Stock Split.

On September 1, 2020, we entered into an Equity Distribution Agreement with certain sales agents to sell \$5.00 billion in shares of our common stock from time to time through an “at-the-market” offering program. Such sales were completed by September 4, 2020 and settled by September 9, 2020, with the sale of 11,141,562 shares of common stock resulting in gross proceeds of \$5.00 billion and net proceeds of \$4.97 billion, net of sales agents’ commissions of \$25 million and other offering costs of \$1 million.

On December 8, 2020, we entered into a separate Equity Distribution Agreement with certain sales agents to sell \$5.00 billion in shares of our common stock from time to time through an “at-the-market” offering program. Such sales were completed by December 9, 2020 and settled by December 11, 2020, with the sale of 7,915,589 shares of common stock resulting in gross proceeds of \$5.00 billion and net proceeds of \$4.99 billion, net of sales agents’ commissions of \$13 million and other offering costs of \$1 million.

Note 2 – Summary of Significant Accounting Policies

Principles of Consolidation

The accompanying consolidated financial statements have been prepared in conformity with U.S. generally accepted accounting principles (“GAAP”) and reflect our accounts and operations and those of our subsidiaries in which we have a controlling financial interest. In accordance with the provisions of Accounting Standards Codification (“ASC”) 810, Consolidation, we consolidate any variable interest entity (“VIE”) of which we are the primary beneficiary. We form VIEs with financing fund investors in the ordinary course of business in order to facilitate the funding and monetization of certain attributes associated with solar energy systems and leases under our direct vehicle leasing programs. 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 VIEs, through arrangements that do not involve controlling voting interests. ASC 810 requires a variable interest holder to consolidate a VIE if that party has the power to direct the activities of the VIE that most significantly impact the VIE’s economic performance and the obligation to absorb losses of the VIE that could potentially be significant to the VIE or the right to receive benefits from the VIE that could potentially be significant to the VIE. We do not consolidate a VIE in which we have a majority ownership interest when we are not considered the primary beneficiary. We have determined that we are the primary beneficiary of all the VIEs (see Note 17, *Variable Interest Entity Arrangements*). We evaluate our relationships with all the VIEs on an ongoing basis to ensure that we continue to be the primary beneficiary. All intercompany transactions and balances have been eliminated upon consolidation.

Use of Estimates

The preparation of financial statements in conformity with U.S. generally accepted accounting principles (“GAAP”) requires management to make estimates and assumptions that affect the reported amounts of assets, liabilities, revenues, costs and expenses and related disclosures in the accompanying notes.

Due to the COVID-19 pandemic, there has been uncertainty and disruption in the global economy and financial markets. The estimates used for, but not limited to, determining significant economic incentive for resale value guarantee arrangements, sales return reserves, the collectability of accounts receivable, inventory valuation, fair value of long-lived assets, goodwill, fair value of financial instruments, fair value and residual value of operating lease vehicles and solar energy systems subject to leases could be impacted. We have assessed the impact and are not aware of any specific events or circumstances that required an update to our estimates and assumptions or materially affected the carrying value of our assets or liabilities as of the date of issuance of this Annual Report on Form 10-K. These estimates may change as new events occur and additional information is obtained. Actual results could differ materially from these estimates under different assumptions or conditions.

Reclassifications

Certain prior period balances have been reclassified to conform to the current period presentation in the consolidated financial statements and the accompanying notes. Restricted cash and MyPower customer notes receivable have been reclassified to other assets and resale value guarantees has been reclassified to other liabilities.

Revenue Recognition

Adoption of ASC 606 revenue standard

On January 1, 2018, we adopted ASC 606, *Revenue from Contracts with Customers*, using the modified retrospective method.

Revenue by source

The following table disaggregates our revenue by major source (in millions):

	Year Ended December 31,		
	2020	2019	2018
Automotive sales without resale value guarantee	\$ 24,053	\$ 19,212	\$ 15,810
Automotive sales with resale value guarantee (1)	551	146	1,403
Automotive regulatory credits	1,580	594	419
Energy generation and storage sales	1,477	1,000	1,056
Services and other	2,306	2,226	1,391
Total revenues from sales and services	29,967	23,178	20,079
Automotive leasing	1,052	869	883
Energy generation and storage leasing	517	531	499
Total revenues	\$ 31,536	\$ 24,578	\$ 21,461

- (1) Due to pricing adjustments we made to our vehicle offerings during 2020 and 2019, we estimated that there was a greater likelihood that customers would exercise their buyback options and adjusted our sales return reserve on vehicles previously sold under our buyback options program, which resulted in a reduction of automotive sales with resale value guarantee. For the years ended December 31, 2020 and 2019, price adjustments resulted in a reduction of automotive sales with resale value guarantee by \$72 million and \$555 million, respectively. The amounts presented represent automotive sales with resale value guarantee net of such pricing adjustments' impact.

*Automotive Segment*Automotive Sales RevenueAutomotive Sales without Resale Value Guarantee

Automotive sales revenue includes revenues related to deliveries of new vehicles and pay-per-use charges, and specific other features and services that meet the definition of a performance obligation under ASC 606, including access to our Supercharger network, internet connectivity, Full Self-Driving ("FSD") features and over-the-air software updates. We recognize revenue on automotive sales upon delivery to the customer, which is when the control of a vehicle transfers. Payments are typically received at the point control transfers or in accordance with payment terms customary to the business. Other features and services such as access to our Supercharger network, internet connectivity and over-the-air software updates are provisioned upon control transfer of a vehicle and recognized over time on a straight-line basis as we have a stand-ready obligation to deliver such services to the customer. We recognize revenue related to these other features and services over the performance period, which is generally the expected ownership life of the vehicle or the eight-year life of the vehicle. Revenue related to FSD features is recognized when functionality is delivered to the customer. For our obligations related to automotive sales, we estimate standalone selling price by considering costs used to develop and deliver the service, third-party pricing of similar options and other information that may be available.

At the time of revenue recognition, we reduce the transaction price and record a sales return reserve against revenue for estimated variable consideration related to future product returns. Such return rate estimates are based on historical experience and are immaterial in all periods presented. In addition, any fees that are paid or payable by us to a customer's lender when we arrange the financing are recognized as an offset against automotive sales revenue.

Costs to obtain a contract mainly relate to commissions paid to our sales personnel for the sale of vehicles. Commissions are not paid on other obligations such as access to our Supercharger network, internet connectivity, FSD features and over-the-air software updates. As our contract costs related to automotive sales are typically fulfilled within one year, the costs to obtain a contract are expensed as incurred. Amounts billed to customers related to shipping and handling are classified as automotive sales revenue, and we have elected to recognize the cost for freight and shipping when control over vehicles, parts, or accessories have transferred to the customer as an expense in cost of automotive sales revenue. Our policy is to exclude taxes collected from a customer from the transaction price of automotive contracts.

Automotive Sales with Resale Value Guarantee or a Buyback Option

We offer resale value guarantees or similar buy-back terms to certain international customers who purchase vehicles and who finance their vehicles through one of our specified commercial banking partners. We also offer resale value guarantees in connection with automotive sales to certain leasing partners. Under these programs, we receive full payment for the vehicle sales price at the time of delivery and our counterparty has the option of selling their vehicle back to us during the guarantee period, which currently is generally at the end of the term of the applicable loan or financing program, for a pre-determined resale value.

With the exception of the *Vehicle Sales to Leasing Partners with a Resale Value Guarantee and a Buyback Option* program discussed within the Automotive Leasing section below, we recognize revenue when control transfers upon delivery to customers in accordance with ASC 606 as a sale with a right of return as we do not believe the customer has a significant economic incentive to exercise the resale value guarantee provided to them at contract inception. The process to determine whether there is a significant economic incentive includes a comparison of a vehicle's estimated market value at the time the option is exercisable with the guaranteed resale value to determine the customer's economic incentive to exercise. The performance obligations and the pattern of recognizing automotive sales with resale value guarantees are consistent with automotive sales without resale value guarantees with the exception of our estimate for sales return reserve. Sales return reserves for automotive sales with resale value guarantees are estimated based on historical experience plus consideration for expected future market values. On a quarterly basis, we assess the estimated market values of vehicles under our buyback options program to determine whether there have been changes to the likelihood of future product returns. As we accumulate more data related to the buyback values of our vehicles or as market conditions change, there may be material changes to their estimated values. Due to price adjustments we made to our vehicle offerings during 2020, we estimated that there is a greater likelihood that customers will exercise their buyback options that were provided prior to such adjustments. As a result, along with the estimated variable consideration related to normal future product returns for vehicles sold under the buyback options program, we adjusted our sales return reserve on vehicles previously sold under our buyback options program resulting in a reduction of automotive sales revenues of \$72 million for the year ended December 31, 2020. If customers elect to exercise the buyback option, we expect to be able to subsequently resell the returned vehicles, which resulted in a corresponding reduction in cost of automotive sales of \$42 million for the year ended December 31, 2020. The net impact was \$30 million reduction in gross profit for the year ended December 31, 2020. The total sales return reserve on vehicles previously sold under our buyback options program was \$703 million and \$639 million as of December 31, 2020 and December 31, 2019, respectively, of which \$202 million and \$93 million was short term, respectively.

Deferred revenue activity related to the access to our Supercharger network, internet connectivity, FSD features and over-the-air software updates on automotive sales with and without resale value guarantee consisted of the following (in millions):

	Year ended December 31,	
	2020	2019
Deferred revenue on automotive sales with and without resale value guarantee— beginning of period	\$ 1,472	\$ 883
Additions	724	880
Net changes in liability for pre-existing contracts	56	9
Revenue recognized	(326)	(300)
Deferred revenue on automotive sales with and without resale value guarantee— end of period	<u>\$ 1,926</u>	<u>\$ 1,472</u>

Deferred revenue is equivalent to the total transaction price allocated to the performance obligations that are unsatisfied, or partially unsatisfied, as of December 31, 2020. From the deferred revenue balance as of December 31, 2019, revenue recognized during the year ended December 31, 2020 was \$283 million. From the deferred revenue balance as of December 31, 2018, revenue recognized during the year ended December 31, 2019 was \$220 million. Of the total deferred revenue on automotive sales with and without resale value guarantees as of December 31, 2020, we expect to recognize \$1.13 billion of revenue in the next 12 months. The remaining balance will be recognized over the performance period as discussed above in Automotive Sales without Resale Value Guarantee.

Automotive Regulatory Credits

We earn tradable credits in the operation of our automotive business under various regulations related to zero-emission vehicles, greenhouse gas, fuel economy and clean fuel. We sell these credits to other regulated entities who can use the credits to comply with emission standards and other regulatory requirements.

Payments for automotive regulatory credits are typically received at the point control transfers to the customer, or in accordance with payment terms customary to the business. We recognize revenue on the sale of automotive regulatory credits at the time control of the regulatory credits is transferred to the purchasing party as automotive sales revenue in the consolidated statements of operations. Revenue from the sale of automotive regulatory credits totaled \$1.58 billion, \$594 million and \$419 million for the years ended December 31, 2020, 2019 and 2018, respectively. Deferred revenue related to sales of automotive regulatory credits was \$21 million and \$140 million as of December 31, 2020 and 2019, respectively. We expect to recognize the majority of the deferred revenue as of December 31, 2020 in the next 12 months.

Automotive Leasing Revenue

Direct Vehicle Operating Leasing Program

We have outstanding leases under our direct vehicle operating leasing programs in the U.S., Canada and in certain countries in Europe. Qualifying customers are permitted to lease a vehicle directly from Tesla for up to 48 months. At the end of the lease term, customers are required to return the vehicles to us or for Model S and Model X leases in certain regions, may opt to purchase the vehicles for a pre-determined residual value. We account for these leasing transactions as operating leases. We record leasing revenues to automotive leasing revenue on a straight-line basis over the contractual term, and we record the depreciation of these vehicles to cost of automotive leasing revenue. For the years ended December 31, 2020, 2019 and 2018, we recognized \$752 million, \$532 million and \$393 million of direct vehicle leasing revenue, respectively. As of December 31, 2020 and 2019, we had deferred \$293 million and \$218 million, respectively, of lease-related upfront payments, which will be recognized on a straight-line basis over the contractual terms of the individual leases.

Our policy is to exclude taxes collected from a customer from the transaction price of automotive contracts.

Vehicle Sales to Leasing Partners with a Resale Value Guarantee and a Buyback Option

We offered buyback options in connection with automotive sales with resale value guarantees with certain leasing partner sales in the U.S. and where we expected the customer had a significant economic incentive to exercise the resale value guarantee provided to them at contract inception, we continued to recognize these transactions as operating leases. These transactions entailed a transfer of leases, which we had originated with an end-customer, to our leasing partner. As control of the vehicles had not been transferred in accordance with ASC 606, these transactions were accounted for as interest-bearing collateralized borrowings in accordance with ASC 840, *Leases*, prior to January 1, 2019. Under this program, cash was received for the full price of the vehicle and the collateralized borrowing value was generally recorded within resale value guarantees and the customer upfront down payment was recorded within deferred revenue. We amortize the deferred revenue amount to automotive leasing revenue on a straight-line basis over the option period and accrue interest expense based on our borrowing rate. The option period expires at the earlier of the end of the contractual option period or the pay-off of the initial loan. We capitalized vehicles under this program to operating lease vehicles, net, on the consolidated balance sheets, and we record depreciation from these vehicles to cost of automotive leasing revenue during the period the vehicle is under a lease arrangement. Cash received for these vehicles, net of revenue recognized during the period, is classified as collateralized lease (repayments) borrowings within cash flows from financing activities in the consolidated statements of cash flows. Following the adoption of ASC 842 on January 1, 2019, all new agreements under this program are accounted for as operating leases and there was no material change in the timing and amount of revenue recognized over the term. Consequently, any cash flows for new agreements are classified as operating cash activities on the consolidated statements of cash flows.

At the end of the lease term, we settle our liability in cash by either purchasing the vehicle from the leasing partner for the buyback option amount or paying a shortfall to the option amount the leasing partner may realize on the sale of the vehicle. Any remaining balances within deferred revenue and resale value guarantee will be settled to automotive leasing revenue. The end customer can extend the lease for a period of up to 6 months. In cases where the leasing partner retains ownership of the vehicle after the end of our option period, we expense the net value of the leased vehicle to cost of automotive leasing revenue. The maximum amount we could be required to pay under this program, should we decide to repurchase all vehicles, was \$42 million and \$214 million as of December 31, 2020 and 2019, respectively, including \$23 million within a 12-month period from December 31, 2020. As of December 31, 2020 and 2019, we had \$42 million and \$238 million, respectively, of such borrowings recorded in accrued liabilities and other and other long-term liabilities and \$11 million and \$29 million, respectively, recorded in deferred revenue liability. For the years ended December 31, 2020, 2019 and 2018, we recognized \$77 million, \$186 million and \$332 million, respectively, of leasing revenue related to this program. The net carrying amount of operating lease vehicles under this program was \$43 million and \$190 million, respectively, as of December 31, 2020 and 2019.

Direct Sales-Type Leasing Program

We have outstanding direct leases and vehicles financed by us under loan arrangements accounted for as sales-type leases under ASC 842 in certain countries in Asia and Europe, which we introduced in volume during the third quarter of 2020. Depending on the specific program, customers may or may not have a right to return the vehicle to us during or at the end of the lease term. If the customer does not have a right to return, the customer will take title to the vehicle at the end of the lease term after making all contractual payments. Under the programs for which there is a right to return, the purchase option is reasonably certain to be exercised by the lessee and we therefore expect the customer to take title to the vehicle at the end of the lease term after making all contractual payments. Qualifying customers are permitted to lease a vehicle directly under these programs for up to 48 months. Our loan arrangements under these programs can have terms for up to 72 months. We recognize all revenue and costs associated with the sales-type lease as automotive leasing revenue and automotive leasing cost of revenue, respectively, upon delivery of the vehicle to the customer. Interest income based on the implicit rate in the lease is recorded to automotive leasing revenue over time as customers are invoiced on a monthly basis. For the year ended December 31, 2020, we recognized \$120 million of sales-type leasing revenue and \$87 million of sales-type leasing cost of revenue.

Services and Other Revenue

Services and other revenue consists of non-warranty after-sales vehicle services, sales of used vehicles, retail merchandise, sales by our acquired subsidiaries to third party customers, and vehicle insurance revenue.

Revenues related to repair and maintenance services are recognized over time as services are provided and extended service plans are recognized over the performance period of the service contract as the obligation represents a stand-ready obligation to the customer. We sell used vehicles, services, service plans, vehicle components and merchandise separately and thus use standalone selling prices as the basis for revenue allocation to the extent that these items are sold in transactions with other performance obligations. Payment for used vehicles, services, and merchandise are typically received at the point when control transfers to the customer or in accordance with payment terms customary to the business. Payments received for prepaid plans are refundable upon customer cancellation of the related contracts and are included within customer deposits on the consolidated balance sheets. Deferred revenue related to services and other revenue was immaterial as of December 31, 2020 and 2019.

Energy Generation and Storage Segment

Energy Generation and Storage Sales

Energy generation and storage sales revenue consists of the sale of solar energy systems and energy storage systems to residential, small commercial, and large commercial and utility grade customers. Energy generation and storage sales revenue also includes revenue from agreements for solar energy systems and power purchase agreements ("PPAs") that commence after January 1, 2019, which is recognized as earned, based on the amount of capacity provided for solar energy systems or electricity delivered for PPAs at the contractual billing rates, assuming all other revenue recognition criteria have been met. Under the practical expedient available under ASC 606-10-55-18, we recognize revenue based on the value of the service which is consistent with the billing amount. Sales of solar energy systems to residential and small scale commercial customers consist of the engineering, design, and installation of the system. Post installation, residential and small scale commercial customers receive a proprietary monitoring system that captures and displays historical energy generation data. Residential and small scale commercial customers pay the full purchase price of the solar energy system upfront. Revenue for the design and installation obligation is recognized when control transfers, which is when we install a solar energy system and the system passes inspection by the utility or the authority having jurisdiction. Revenue for the monitoring service is recognized ratably as a stand-ready obligation over the warranty period of the solar energy system. Sales of energy storage systems to residential and small scale commercial customers consist of the installation of the energy storage system and revenue is recognized when control transfers, which is when the product has been delivered or, if we are performing installation, when installed and commissioned. Payment for such storage systems is made upon invoice or in accordance with payment terms customary to the business.

For large commercial and utility grade solar energy system and energy storage system sales which consist of the engineering, design, and installation of the system, customers make milestone payments that are consistent with contract-specific phases of a project. Revenue from such contracts is recognized over time using the percentage of completion method based on cost incurred as a percentage of total estimated contract costs for energy storage system sales and as a percentage of total estimated labor hours for solar energy system sales. Certain large-scale commercial and utility grade solar energy system and energy storage system sales also include operations and maintenance service which are negotiated with the design and installation contracts and are thus considered to be a combined contract with the design and installation service. For certain large commercial and utility grade solar energy systems and energy storage systems where the percentage of completion method does not apply, revenue is recognized when control transfers, which is when the product has been delivered to the customer and commissioned for energy storage systems and when the project has received permission to operate from the utility for solar energy systems. Operations and maintenance service revenue is recognized ratably over the respective contract term for solar energy system sales and upon delivery of the service for energy storage system sales. Customer payments for such services are usually paid annually or quarterly in advance.

In instances where there are multiple performance obligations in a single contract, we allocate the consideration to the various obligations in the contract based on the relative standalone selling price method. Standalone selling prices are estimated based on estimated costs plus margin or using market data for comparable products. Costs incurred on the sale of residential installations before the solar energy systems are completed are included as work in process within inventory in the consolidated balance sheets. Any fees that are paid or payable by us to a solar loan lender would be recognized as an offset against revenue. Costs to obtain a contract relate mainly to commissions paid to our sales personnel related to the sale of solar energy systems and energy storage systems. As our contract costs related to solar energy system and energy storage system sales are typically fulfilled within one year, the costs to obtain a contract are expensed as incurred.

As part of our solar energy system and energy storage system contracts, we may provide the customer with performance guarantees that warrant that the underlying system will meet or exceed the minimum energy generation or energy performance requirements specified in the contract. In certain instances, we may receive a bonus payment if the system performs above a specified level. Conversely, if a solar energy system or energy storage system does not meet the performance guarantee requirements, we may be required to pay liquidated damages. Other forms of variable consideration related to our large commercial and utility grade solar energy system and energy storage system contracts include variable customer payments that will be made based on our energy market participation activities. Such guarantees and variable customer payments represent a form of variable consideration and are estimated at contract inception at their most likely amount and updated at the end of each reporting period as additional performance data becomes available. Such estimates are included in the transaction price only to the extent that it is probable a significant reversal of revenue will not occur.

We record as deferred revenue any non-refundable amounts that are collected from customers related to fees charged for prepayments and remote monitoring service and operations and maintenance service, which is recognized as revenue ratably over the respective customer contract term. As of December 31, 2020 and 2019, deferred revenue related to such customer payments amounted to \$187 million and \$156 million, respectively. Revenue recognized from the deferred revenue balance as of December 31, 2019 was \$34 million for the year ended December 31, 2020. Revenue recognized from the deferred revenue balance as of December 31, 2018 was \$41 million for the year ended December 31, 2019. We have elected the practical expedient to omit disclosure of the amount of the transaction price allocated to remaining performance obligations for energy generation and storage sales with an original expected contract length of one year or less and the amount that we have the right to invoice when that amount corresponds directly with the value of the performance to date. As of December 31, 2020, total transaction price allocated to performance obligations that were unsatisfied or partially unsatisfied for contracts with an original expected length of more than one year was \$100 million. Of this amount, we expect to recognize \$6 million in the next 12 months and the remaining over a period up to 27 years.

Energy Generation and Storage Leasing

For revenue arrangements where we are the lessor under operating lease agreements for energy generation and storage products, we record lease revenue from minimum lease payments, including upfront rebates and incentives earned from such systems, on a straight-line basis over the life of the lease term, assuming all other revenue recognition criteria have been met. The difference between the payments received and the revenue recognized is recorded as deferred revenue or deferred asset on the consolidated balance sheet.

For solar energy systems where customers purchase electricity from us under PPAs prior to January 1, 2019, we have determined that these agreements should be accounted for as operating leases pursuant to ASC 840. Revenue is recognized based on the amount of electricity delivered at rates specified under the contracts, assuming all other revenue recognition criteria are met.

We record as deferred revenue any amounts that are collected from customers, including lease prepayments, in excess of revenue recognized and operations and maintenance service fees, which is recognized as revenue ratably over the respective customer contract term. As of December 31, 2020 and 2019, deferred revenue related to such customer payments amounted to \$206 million and \$226 million, respectively. Deferred revenue also includes the portion of rebates and incentives received from utility companies and various local and state government agencies, which is recognized as revenue over the lease term. As of December 31, 2020 and 2019, deferred revenue from rebates and incentives amounted to \$29 million and \$36 million, respectively.

We capitalize initial direct costs from the execution of agreements for solar energy systems and PPAs, which include the referral fees and sales commissions, as an element of solar energy systems, net, and subsequently amortize these costs over the term of the related agreements.

Cost of Revenues

Automotive Segment

Automotive Sales

Cost of automotive sales revenue includes direct parts, material and labor costs, manufacturing overhead, including depreciation costs of tooling and machinery, shipping and logistic costs, vehicle connectivity costs, allocations of electricity and infrastructure costs related to our Supercharger network, and reserves for estimated warranty expenses. Cost of automotive sales revenues also includes adjustments to warranty expense and charges to write down the carrying value of our inventory when it exceeds its estimated net realizable value and to provide for obsolete and on-hand inventory in excess of forecasted demand.

Automotive Leasing

Cost of automotive leasing revenue includes the amortization of operating lease vehicles over the lease term, cost of goods sold associated with direct sales-type leases, as well as warranty expenses related to leased vehicles. Cost of automotive leasing revenue also includes vehicle connectivity costs and allocations of electricity and infrastructure costs related to our Supercharger network for vehicles under our leasing programs.

Services and Other

Costs of services and other revenue includes costs associated with providing non-warranty after-sales services, costs to acquire and certify used vehicles, costs for retail merchandise, and costs to provide vehicle insurance. Cost of services and other revenue also includes direct parts, material and labor costs, manufacturing overhead associated with the sales by our acquired subsidiaries to third party customers.

Energy Generation and Storage Segment

Energy Generation and Storage

Cost of energy generation and storage revenue includes direct and indirect material and labor costs, warehouse rent, freight, warranty expense, other overhead costs and amortization of certain acquired intangible assets. Cost of energy generation and storage revenue also includes charges to write down the carrying value of our inventory when it exceeds its estimated net realizable value and to provide for obsolete and on-hand inventory in excess of forecasted demand. In agreements for solar energy system and PPAs where we are the lessor, the cost of revenue is primarily comprised of depreciation of the cost of leased solar energy systems, maintenance costs associated with those systems and amortization of any initial direct costs.

Leases

We adopted ASC 842, *Leases*, as of January 1, 2019 using the cumulative effect adjustment approach (“adoption of the new lease standard”). In addition, we elected the package of practical expedients permitted under the transition guidance within the new standard, which allowed us to carry forward the historical determination of contracts as leases, lease classification and not reassess initial direct costs for historical lease arrangements. Accordingly, previously reported financial statements, including footnote disclosures, have not been recast to reflect the application of the new standard to all comparative periods presented. The finance lease classification under ASC 842 includes leases previously classified as capital leases under ASC 840.

Research and Development Costs

Research and development costs are expensed as incurred.

Marketing, Promotional and Advertising Costs

Marketing, promotional and advertising costs are expensed as incurred and are included as an element of selling, general and administrative expense in the consolidated statement of operations. Marketing, promotional and advertising costs were immaterial for the years ended December 31, 2020, 2019 and 2018.

Income Taxes

Income taxes are computed using the asset and liability method, under which deferred tax assets and liabilities are determined based on the difference between the financial statement and tax bases of assets and liabilities using enacted tax rates in effect for the year in which the differences are expected to affect taxable income. Valuation allowances are established when necessary to reduce deferred tax assets to the amount expected to be realized.

We record liabilities related to uncertain tax positions when, despite our belief that our tax return positions are supportable, we believe that it is more likely than not that those positions may not be fully sustained upon review by tax authorities. Accrued interest and penalties related to unrecognized tax benefits are classified as income tax expense.

The Tax Cuts and Jobs Act ("TCJA") subjects a U.S. shareholder to tax on global intangible low-taxed income ("GILTI") earned by certain foreign subsidiaries. Under GAAP, we can make an accounting policy election to either treat taxes due on the GILTI inclusion as a current period expense or factor such amounts into our measurement of deferred taxes. We elected the deferred method, under which we recorded the corresponding deferred tax assets and liabilities on our consolidated balance sheets, currently subject to valuation allowance.

Comprehensive Income (Loss)

Comprehensive income (loss) is comprised of net income (loss) and other comprehensive income (loss). Other comprehensive income (loss) consists of foreign currency translation adjustments that have been excluded from the determination of net income (loss).

Stock-Based Compensation

We recognize compensation expense for costs related to all share-based payments, including stock options, restricted stock units ("RSUs") and our employee stock purchase plan (the "ESPP"). The fair value of stock option awards with only service and/or performance conditions is estimated on the grant or offering date using the Black-Scholes option-pricing model. The fair value of RSUs is measured on the grant date based on the closing fair market value of our common stock. Stock-based compensation expense is recognized on a straight-line basis over the requisite service period, net of actual forfeitures in the period.

For performance-based awards, stock-based compensation expense is recognized over the expected performance achievement period of individual performance milestones when the achievement of each individual performance milestone becomes probable. For performance-based awards with a vesting schedule based entirely on the attainment of both performance and market conditions, stock-based compensation expense associated with each tranche is recognized over the longer of (i) the expected achievement period for the operational milestone for such tranche and (ii) the expected achievement period for the related market capitalization milestone determined on the grant date, beginning at the point in time when the relevant operational milestone is considered probable of being achieved. If such operational milestone becomes probable any time after the grant date, we will recognize a cumulative catch-up expense from the grant date to that point in time. If the related market capitalization milestone is achieved earlier than its expected achievement period and the achievement of the related operational milestone, then the stock-based compensation expense will be recognized over the expected achievement period for the operational milestone, which may accelerate the rate at which such expense is recognized. The fair value of such awards is estimated on the grant date using Monte Carlo simulations (see Note 14, *Equity Incentive Plans*).

As we accumulate additional employee stock-based awards data over time and as we incorporate market data related to our common stock, we may calculate significantly different volatilities and expected lives, which could materially impact the valuation of our stock-based awards and the stock-based compensation expense that we will recognize in future periods. Stock-based compensation expense is recorded in cost of revenues, research and development expense and selling, general and administrative expense in the consolidated statements of operations.

Noncontrolling Interests and Redeemable Noncontrolling Interests

Noncontrolling interests and redeemable noncontrolling interests represent third-party interests in the net assets under certain funding arrangements, or funds, that we enter into to finance the costs of solar energy systems and vehicles under operating leases. We have determined that the contractual provisions of the funds represent substantive profit sharing arrangements. We have further determined that the methodology for calculating the noncontrolling interest and redeemable noncontrolling interest balances that reflects the substantive profit sharing arrangements is a balance sheet approach using the hypothetical liquidation at book value (“HLBV”) method. We, therefore, determine the amount of the noncontrolling interests and redeemable noncontrolling interests in the net assets of the funds at each balance sheet date using the HLBV method, which is presented on the consolidated balance sheet as noncontrolling interests in subsidiaries and redeemable noncontrolling interests in subsidiaries. Under the HLBV method, the amounts reported as noncontrolling interests and redeemable noncontrolling interests in the consolidated balance sheet represent the amounts the third parties would hypothetically receive at each balance sheet date under the liquidation provisions of the funds, assuming the net assets of the funds were liquidated at their recorded amounts determined in accordance with GAAP and with tax laws effective at the balance sheet date and distributed to the third parties. The third parties’ interests in the results of operations of the funds are determined as the difference in the noncontrolling interest and redeemable noncontrolling interest balances in the consolidated balance sheets between the start and end of each reporting period, after taking into account any capital transactions between the funds and the third parties. However, the redeemable noncontrolling interest balance is at least equal to the redemption amount. The redeemable noncontrolling interest balance is presented as temporary equity in the mezzanine section of the consolidated balance sheet since these third parties have the right to redeem their interests in the funds for cash or other assets. For certain funds, there may be significant fluctuations in the ending balance of redeemable noncontrolling interest in subsidiaries and net income (loss) attributable to noncontrolling interests and redeemable noncontrolling interests in subsidiaries due to changes in the liquidation provisions as time-based milestones are reached.

Net Income (Loss) per Share of Common Stock Attributable to Common Stockholders

Basic net income (loss) per share of common stock attributable to common stockholders is calculated by dividing net income (loss) attributable to common stockholders by the weighted-average shares of common stock outstanding for the period. During the year ended December 31, 2020, we decreased net income attributable to common stockholders by \$31 million to arrive at the numerator used to calculate net income per share. During the year ended December 31, 2019, we increased net loss attributable to common stockholders by \$8 million to arrive at the numerator used to calculate net loss per share. These adjustments represent the difference between the cash we paid to the financing fund investors for their noncontrolling interest in our subsidiaries and the carrying amount of the noncontrolling interest on our consolidated balance sheets, in accordance with ASC 260, *Earnings per Share*. Potentially dilutive shares, which are based on the weighted-average shares of common stock underlying outstanding stock-based awards, warrants and convertible senior notes using the treasury stock method or the if-converted method, as applicable, are included when calculating diluted net income (loss) per share of common stock attributable to common stockholders when their effect is dilutive. Since we intend to settle or have settled in cash the principal outstanding under our 0.25% Convertible Senior Notes due in 2019 (“2019 Notes”), 1.25% Convertible Senior Notes due in 2021 (“2021 Notes”), 2.375% Convertible Senior Notes due in 2022 (“2022 Notes”), 2024 Notes and our subsidiary’s 5.50% Convertible Senior Notes due in 2022, we use the treasury stock method applied using our average share price during the period when calculating their potential dilutive effect, if any. Furthermore, in connection with the offerings of our convertible senior notes, we entered into convertible note hedges and warrants (see Note 12, *Debt*). However, our convertible note hedges are not included when calculating potentially dilutive shares since their effect is always anti-dilutive. Warrants which have a strike price above our average share price during the period were out of the money and were not included in the tables below. Warrants will be included in the weighted-average shares used in computing basic net income (loss) per share of common stock in the period(s) they are settled.

The following table presents the reconciliation of basic to diluted weighted average shares used in computing net income (loss) per share of common stock attributable to common stockholders, as adjusted to give effect to the Stock Split (in millions):

	Year Ended December 31,		
	2020	2019	2018
Weighted average shares used in computing net income (loss) per share of common stock, basic	933	887	853
Add:			
Stock-based awards	66	—	—
Convertible senior notes	47	—	—
Warrants	37	—	—
Weighted average shares used in computing net income (loss) per share of common stock, diluted	<u>1,083</u>	<u>887</u>	<u>853</u>

The following table presents the potentially dilutive shares that were excluded from the computation of diluted net income (loss) per share of common stock attributable to common stockholders, because their effect was anti-dilutive (in millions):

	Year Ended December 31,		
	2020	2019	2018
Stock-based awards	2	50	50
Convertible senior notes	1	5	7
Warrants	—	—	1

Business Combinations

We account for business acquisitions under ASC 805, *Business Combinations*. The total purchase consideration for an acquisition is measured as the fair value of the assets given, equity instruments issued and liabilities assumed at the acquisition date. Costs that are directly attributable to the acquisition are expensed as incurred. Identifiable assets (including intangible assets), liabilities assumed (including contingent liabilities) and noncontrolling interests in an acquisition are measured initially at their fair values at the acquisition date. We recognize goodwill if the fair value of the total purchase consideration and any noncontrolling interests is in excess of the net fair value of the identifiable assets acquired and the liabilities assumed. We recognize a bargain purchase gain within other income (expense), net, on the consolidated statement of operations if the net fair value of the identifiable assets acquired and the liabilities assumed is in excess of the fair value of the total purchase consideration and any noncontrolling interests. We include the results of operations of the acquired business in the consolidated financial statements beginning on the acquisition date.

Cash and Cash Equivalents

All highly liquid investments with an original maturity of three months or less at the date of purchase are considered cash equivalents. Our cash equivalents are primarily comprised of money market funds.

Restricted Cash

We maintain certain cash balances restricted as to withdrawal or use. Our restricted cash is comprised primarily of cash as collateral for our sales to lease partners with a resale value guarantee, letters of credit, real estate leases, insurance policies, credit card borrowing facilities and certain operating leases. In addition, restricted cash includes cash received from certain fund investors that have not been released for use by us and cash held to service certain payments under various secured debt facilities. We record restricted cash as other assets in the consolidated balance sheets and determine current or non-current classification based on the expected duration of the restriction.

Our total cash and cash equivalents and restricted cash, as presented in the consolidated statements of cash flows, was as follows (in millions):

	December 31, 2020	December 31, 2019	December 31, 2018
Cash and cash equivalents	\$ 19,384	\$ 6,268	\$ 3,686
Restricted cash included in prepaid expenses and other current assets	238	246	193
Restricted cash included in other non-current assets	279	269	398
Total as presented in the consolidated statements of cash flows	<u>\$ 19,901</u>	<u>\$ 6,783</u>	<u>\$ 4,277</u>

Accounts Receivable and Allowance for Doubtful Accounts

Accounts receivable primarily include amounts related to receivables from financial institutions and leasing companies offering various financing products to our customers, sales of energy generation and storage products, sales of regulatory credits to other automotive manufacturers, government rebates already passed through to customers and maintenance services on vehicles owned by leasing companies. We provide an allowance against accounts receivable for the amount we expect to be uncollectible. We write-off accounts receivable against the allowance when they are deemed uncollectible.

Depending on the day of the week on which the end of a fiscal quarter falls, our accounts receivable balance may fluctuate as we are waiting for certain customer payments to clear through our banking institutions and receipts of payments from our financing partners, which can take up to approximately two weeks based on the contractual payment terms with such partners. Our accounts receivable balances associated with our sales of regulatory credits, which are typically transferred to other manufacturers during the last few days of the quarter, is dependent on contractual payment terms. Additionally, government rebates can take up to a year or more to be collected depending on the customary processing timelines of the specific jurisdictions issuing them. These various factors may have a significant impact on our accounts receivable balance from period to period.

MyPower Customer Notes Receivable

We have customer notes receivable under the legacy MyPower loan program. MyPower was offered by one of our subsidiaries to provide residential customers with the option to finance the purchase of a solar energy system through a 30-year loan. The outstanding balances, net of any allowance for credit losses, are presented on the consolidated balance sheet as a component of prepaid expenses and other current assets for the current portion and as other non-current assets for the long-term portion. We adopted ASC 326, *Financial Instruments – Credit Losses*, on January 1, 2020 on a modified retrospective basis. Under ASC 326, expected credit loss for customer notes receivable are measured on a collective basis and are determined as the difference between the amortized cost basis and the present value of cash flows expected to be collected. In determining expected credit losses, we consider our historical level of credit losses, current economic trends, and reasonable and supportable forecasts that affect the collectability of the future cash flows. We write-off customer notes receivable when they are deemed uncollectible and the amount of potentially uncollectible amounts has been insignificant. Using a modified retrospective approach for the impact upon adoption, we recorded an increase to the allowance for credit losses of \$37 million on January 1, 2020, with an offset to accumulated deficit. As of December 31, 2020 and 2019, the total outstanding balance of MyPower customer notes receivable, net of allowance for credit losses, was \$334 million and \$402 million, respectively, of which \$9 million was due in the next 12 months as of December 31, 2020 and 2019, respectively. As of December 31, 2020, the allowance for credit losses was \$45 million. In addition, there were no material non-accrual or past due customer notes receivable as of December 31, 2020.

Concentration of Risk

Credit Risk

Financial instruments that potentially subject us to a concentration of credit risk consist of cash, cash equivalents, restricted cash, accounts receivable, convertible note hedges, and interest rate swaps. Our cash balances are primarily invested in money market funds or on deposit at high credit quality financial institutions in the U.S. These deposits are typically in excess of insured limits. As of December 31, 2020 and 2019, no entity represented 10% or more of our total accounts receivable balance. The risk of concentration for our convertible note hedges and interest rate swaps is mitigated by transacting with several highly-rated multinational banks.

Supply Risk

We are dependent on our suppliers, the majority of which are single source suppliers, and the inability of these suppliers to deliver necessary components of our products in a timely manner at prices, quality levels and volumes acceptable to us, or our inability to efficiently manage these components from these suppliers, could have a material adverse effect on our business, prospects, financial condition and operating results.

Although all of our manufacturing facilities are operational, and we continue to increase our output and add additional capacity and are working with each of our suppliers and government agencies on meeting, ramping and sustaining our production, our ability to sustain this trajectory depends, among other things, on the readiness and solvency of our suppliers and vendors through any macroeconomic factors resulting from the COVID-19 pandemic.

Inventory Valuation

Inventories are stated at the lower of cost or net realizable value. Cost is computed using standard cost for vehicles and energy storage products, which approximates actual cost on a first-in, first-out basis. In addition, cost for solar energy systems is recorded using actual cost. We record inventory write-downs for excess or obsolete inventories based upon assumptions about current and future demand forecasts. If our inventory on-hand is in excess of our future demand forecast, the excess amounts are written-off.

We also review our inventory to determine whether its carrying value exceeds the net amount realizable upon the ultimate sale of the inventory. This requires us to determine the estimated selling price of our vehicles less the estimated cost to convert the inventory on-hand into a finished product. Once inventory is written-down, a new, lower cost basis for that inventory is established and subsequent changes in facts and circumstances do not result in the restoration or increase in that newly established cost basis.

Should our estimates of future selling prices or production costs change, additional and potentially material increases to this reserve may be required. A small change in our estimates may result in a material charge to our reported financial results.

Operating Lease Vehicles

Vehicles that are leased as part of our direct vehicle leasing program and vehicles delivered to leasing partners with a resale value guarantee and a buyback option where there is significant economic incentive to exercise at contract inception are classified as operating lease vehicles as the related revenue transactions are treated as operating leases under ASC 842 (refer to the Automotive Leasing Revenue section above for details). Operating lease vehicles are recorded at cost less accumulated depreciation. We generally depreciate their value, less salvage value, using the straight-line-method to cost of automotive leasing revenue over the contractual period. The gross cost of operating lease vehicles as of December 31, 2020 and 2019 was \$3.54 billion and \$2.85 billion, respectively. Operating lease vehicles on the consolidated balance sheets are presented net of accumulated depreciation of \$446 million and \$406 million as of December 31, 2020 and 2019, respectively.

Solar Energy Systems, Net

We are the lessor of solar energy systems. Prior to January 1, 2019, these leases were accounted for as operating leases in accordance with ASC 840. Under ASC 840, to determine lease classification, we evaluated the lease terms to determine whether there was a transfer of ownership or bargain purchase option at the end of the lease, whether the lease term was greater than 75% of the useful life or whether the present value of the minimum lease payments exceeded 90% of the fair value at lease inception. Agreements for solar energy system leases and PPAs that commence after January 1, 2019 no longer meet the definition of a lease upon the adoption of ASC 842 and are instead accounted for in accordance with ASC 606. We utilize periodic appraisals to estimate useful lives and fair values at lease inception and residual values at lease termination. Solar energy systems are stated at cost less accumulated depreciation.

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

Solar energy systems in service	30 to 35 years
Initial direct costs related to customer solar energy system lease acquisition costs	Lease term (up to 25 years)

Solar energy systems pending interconnection will be depreciated as solar energy systems in service when they have been interconnected and placed in-service. Solar energy systems under construction represents systems that are under installation, which will be depreciated as solar energy systems in service when they are completed, interconnected and placed in service. Initial direct costs related to customer solar energy system agreement acquisition costs are capitalized and amortized over the term of the related customer agreements.

Property, Plant and Equipment, net

Property, plant and equipment, net, including leasehold improvements, are recognized at cost less accumulated depreciation. Depreciation is generally computed using the straight-line method over the estimated useful lives of the respective assets, as follows:

Machinery, equipment, vehicles and office furniture	2 to 12 years
Building and building improvements	15 to 30 years
Computer equipment and software	3 to 10 years

Leasehold improvements are depreciated on a straight-line basis over the shorter of their estimated useful lives or the terms of the related leases.

Upon the retirement or sale of our property, plant and equipment, the cost and associated accumulated depreciation are removed from the consolidated balance sheet, and the resulting gain or loss is reflected on the consolidated statement of operations. Maintenance and repair expenditures are expensed as incurred while major improvements that increase the functionality, output or expected life of an asset are capitalized and depreciated ratably over the identified useful life.

Interest expense on outstanding debt is capitalized during the period of significant capital asset construction. Capitalized interest on construction-in-progress is included within property, plant and equipment, net and is amortized over the life of the related assets.

Long-Lived Assets Including Acquired Intangible Assets

We review our property, plant and equipment, solar energy systems, long-term prepayments and intangible assets for impairment whenever events or changes in circumstances indicate that the carrying amount of an asset (or asset group) may not be recoverable. We measure recoverability by comparing the carrying amount to the future undiscounted cash flows that the asset is expected to generate. If the asset is not recoverable, its carrying amount would be adjusted down to its fair value. For the year ended December 31, 2020, we have recognized no material impairments of our long-lived assets. For the years ended December 31, 2019 and 2018, we have recognized certain impairments of our long-lived assets (refer to Note 22, *Restructuring and Other*, for further details).

Intangible assets with definite lives are amortized on a straight-line basis over their estimated useful lives, which range from one to thirty years.

Goodwill

We assess goodwill for impairment annually in the fourth quarter, or more frequently if events or changes in circumstances indicate that it might be impaired, by comparing its carrying value to the reporting unit's fair value. For the years ended December 31, 2020, 2019, and 2018, we had not recognized any impairment of goodwill.

Capitalization of Software Costs

For costs incurred in development of internal use software, we capitalize costs incurred during the application development stage to property, plant and equipment, net on the consolidated balance sheets. 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 three years. We evaluate the useful lives of these assets on an annual basis, and we test for impairment whenever events or changes in circumstances occur that could impact the recoverability of these assets.

Foreign Currency

We determine the functional and reporting currency of each of our international subsidiaries and their operating divisions based on the primary currency in which they operate. In cases where the functional currency is not the U.S. dollar, we recognize a cumulative translation adjustment created by the different rates we apply to current period income or loss and the balance sheet. For each subsidiary, we apply the monthly average functional exchange rate to its monthly income or loss and the month-end functional currency rate to translate the balance sheet.

Foreign currency transaction gains and losses are a result of the effect of exchange rate changes on transactions denominated in currencies other than the functional currency. Transaction gains and losses are recognized in other (expense) income, net, in the consolidated statements of operations. For the years ended December 31, 2020, 2019 and 2018, we recorded net foreign currency transaction losses of \$114 million, gains of \$48 million and gains of \$2 million, respectively.

Warranties

We provide a manufacturer's warranty on all new and used vehicles and a warranty on the installation and components of the energy generation and storage systems we sell for periods typically between 10 to 25 years. We accrue a warranty reserve for the products sold by us, which includes our best estimate of the projected costs to repair or replace items under warranties and recalls when identified. These estimates are based on actual claims incurred to date and an estimate of the nature, frequency and costs of future claims. These estimates are inherently uncertain given our relatively short history of sales, and changes to our historical or projected warranty experience may cause material changes to the warranty reserve in the future. The warranty reserve does not include projected warranty costs associated with our vehicles subject to operating lease accounting and our solar energy systems under lease contracts or PPAs, as the costs to repair these warranty claims are expensed as incurred. The portion of the warranty reserve expected to be incurred within the next 12 months is included within accrued liabilities and other, while the remaining balance is included within other long-term liabilities on the consolidated balance sheets. Warranty expense is recorded as a component of cost of revenues in the consolidated statements of operations. Due to the magnitude of our automotive business, accrued warranty balance was primarily related to our automotive segment. Accrued warranty activity consisted of the following (in millions):

	Year Ended December 31,		
	2020	2019	2018
Accrued warranty—beginning of period	\$ 1,089	\$ 748	\$ 402
Warranty costs incurred	(312)	(250)	(209)
Net changes in liability for pre-existing warranties, including expirations and foreign exchange impact	66	36	(26)
Additional warranty accrued from adoption of ASC 606	—	—	37
Provision for warranty	625	555	544
Accrued warranty—end of period	<u>\$ 1,468</u>	<u>\$ 1,089</u>	<u>\$ 748</u>

Solar Renewable Energy Credits

We account for Solar Renewable Energy Certificates ("SRECs") when they are purchased by us or sold to third parties. For SRECs generated by solar energy systems owned by us and minted by government agencies, we do not recognize any specifically identifiable costs as there are no specific incremental costs incurred to generate the SRECs. We recognize revenue within the energy generation and storage segment from the sale of an SREC when the SREC is transferred to the buyer, and the cost of the SREC, if any, is then recorded to energy generation and storage cost of revenue.

Nevada Tax Incentives

In connection with the construction of Gigafactory Nevada, we entered into agreements with the State of Nevada and Storey County in Nevada that provide abatements for specified taxes, discounts to the base tariff energy rates and transferable tax credits of up to \$195.0 million in consideration of capital investment and hiring targets that were met at Gigafactory Nevada. These incentives are available until June 2024 or June 2034, depending on the incentive. As of December 31, 2020 and 2019, we had earned the maximum of \$195 million of transferable tax credits under these agreements.

Gigafactory Texas Tax Incentives

In connection with the construction of Gigafactory Texas, we entered into a 20-year agreement with Travis County in Texas pursuant to which we would receive grant funding equal to 70-80% of property taxes paid by us to Travis County and a separate 10-year agreement with the Del Valle Independent School District in Texas pursuant to which a portion of the taxable value of our property would be capped at a specified amount, in each case subject to our meeting certain minimum economic development metrics through our construction and operations at Gigafactory Texas. As of December 31, 2020, we had not yet received any grant funding related to property taxes paid to Travis County.

Recent Accounting Pronouncements

Recently issued accounting pronouncements not yet adopted

In December 2019, the FASB issued ASU No. 2019-12, Simplifying the Accounting for Income Taxes, as part of its initiative to reduce complexity in accounting standards. The amendments in the ASU include removing exceptions to incremental intraperiod tax allocation of losses and gains from different financial statement components, exceptions to the method of recognizing income taxes on interim period losses, and exceptions to deferred tax liability recognition related to foreign subsidiary investments. In addition, the ASU requires that entities recognize franchise tax based on an incremental method and requires an entity to evaluate the accounting for step-ups in the tax basis of goodwill as inside or outside of a business combination. The amendments in the ASU are effective for fiscal years beginning after December 15, 2020, including interim periods therein. Early adoption of the standard is permitted, including adoption in interim or annual periods for which financial statements have not yet been issued. We have not early adopted this ASU as of December 31, 2020. The ASU is currently not expected to have a material impact on our consolidated financial statements.

In March 2020, the FASB issued ASU No. 2020-04, Facilitation of the Effects of Reference Rate Reform on Financial Reporting (Topic 848). The ASU provides optional expedients and exceptions for applying GAAP to transactions affected by reference rate (e.g., LIBOR) reform if certain criteria are met, for a limited period of time to ease the potential burden in accounting for (or recognizing the effects of) reference rate reform on financial reporting. The ASU is effective as of March 12, 2020 through December 31, 2022. We will evaluate transactions or contract modifications occurring as a result of reference rate reform and determine whether to apply the optional guidance on an ongoing basis. The ASU is currently not expected to have a material impact on our consolidated financial statements.

In August 2020, the FASB issued ASU 2020-06, Accounting for Convertible Instruments and Contracts in an Entity's Own Equity. The ASU simplifies the accounting for convertible instruments by removing certain separation models in ASC 470-20, Debt—Debt with Conversion and Other Options, for convertible instruments. The ASU updates the guidance on certain embedded conversion features that are not required to be accounted for as derivatives under Topic 815, Derivatives and Hedging, or that do not result in substantial premiums accounted for as paid-in capital, such that those features are no longer required to be separated from the host contract. The convertible debt instruments will be accounted for as a single liability measured at amortized cost. This will also result in the interest expense recognized for convertible debt instruments to be typically closer to the coupon interest rate when applying the guidance in Topic 835, Interest. Further, the ASU made amendments to the EPS guidance in Topic 260 for convertible instruments, the most significant impact of which is requiring the use of the if-converted method for diluted EPS calculation, and no longer allowing the net share settlement method. The ASU also made revisions to Topic 815-40, which provides guidance on how an entity must determine whether a contract qualifies for a scope exception from derivative accounting. The amendments to Topic 815-40 change the scope of contracts that are recognized as assets or liabilities. The ASU is effective for interim and annual periods beginning after December 15, 2021, with early adoption permitted for periods beginning after December 15, 2020. Adoption of the ASU can either be on a modified retrospective or full retrospective basis.

We will adopt the ASU on January 1, 2021 on a modified retrospective basis. The adoption is expected to reduce additional paid in capital and convertible senior notes (mezzanine equity) by approximately \$475 million and \$50 million, respectively for the recombination of the equity conversion component of our convertible debt remaining outstanding, which was initially separated and recorded in equity, remove the remaining debt discounts recorded for this previous separation for approximately \$269 million and reduce property, plant and equipment for previously capitalized interest by approximately \$45 million, as a result. The net effect of these adjustments will be recorded as a reduction in the balance of our opening accumulated deficit as of January 1, 2021.

We currently expect the adoption of the ASU will result in the reduction of non-cash interest expense for the year ending December 31, 2021 and until the affected notes have been settled, before the impact of reduction of our interest capitalization, which is not expected to be material. The reduction of depreciation expense through cost of goods sold is not expected to be material for the year ending December 31, 2021. These reduced expenses will increase the income attributable to common stockholders for both basic and diluted earnings per share. The required use of the if converted method is not expected to have a significant impact on the calculation of common share equivalents included in the measure of our diluted earnings per share for our 2021 Notes, 2022 Notes, 2024 Notes and our subsidiary's 5.50% Convertible Senior Notes due in 2022. The amendments to the derivative accounting guidance are not expected to have a material impact on our consolidated financial statements. The adoption will have no impact on the consolidated statement of cash flows.

Recently adopted accounting pronouncements

In June 2016, the FASB issued ASU No. 2016-13, Measurement of Credit Losses on Financial Instruments, to require financial assets carried at amortized cost to be presented at the net amount expected to be collected based on historical experience, current conditions and forecasts. Subsequently, the FASB issued ASU No. 2018-19, Codification Improvements to Topic 326, to clarify that receivables arising from operating leases are within the scope of lease accounting standards. Further, the FASB issued ASU No. 2019-04, ASU No. 2019-05, ASU 2019-10, ASU 2019-11, ASU 2020-02 and ASU 2020-03 to provide additional guidance on the credit losses standard. Adoption of the ASUs is on a modified retrospective basis. We adopted the ASUs on January 1, 2020. The ASUs did not have a material impact on our consolidated financial statements. ASU No. 2016-13 applies to all financial assets including loans, trade receivables and any other financial assets not excluded from the scope that have the contractual right to receive cash. The adoption of this ASU did not have any impact except on MyPower customer notes receivable. Refer to MyPower Customer Notes Receivable above for further details.

In January 2017, the FASB issued ASU No. 2017-04, Simplifying the Test for Goodwill Impairment, to simplify the test for goodwill impairment by removing Step 2. An entity will, therefore, perform the goodwill impairment test by comparing the fair value of a reporting unit with its carrying amount and recognizing an impairment charge for the amount by which the carrying amount exceeds the fair value, not to exceed the total amount of goodwill allocated to the reporting unit. An entity still has the option to perform a qualitative assessment to determine if the quantitative impairment test is necessary. We adopted the ASU prospectively on January 1, 2020. The ASU did not have a material impact on our consolidated financial statements.

In August 2018, the FASB issued ASU No. 2018-15, Customer's Accounting for Implementation Costs Incurred in a Cloud Computing Arrangement that Is a Service Contract. The ASU aligns the requirements for capitalizing implementation costs incurred in a hosting arrangement that is a service contract with the requirements for capitalizing implementation costs incurred to develop or obtain internal-use software (and hosting arrangements that include an internal-use software license). We adopted the ASU prospectively on January 1, 2020. The ASU did not have a material impact on our consolidated financial statements.

Note 3 – Business Combinations

For the year ended December 31, 2020, we completed various acquisitions for which consideration was immaterial on an individual basis and in aggregate.

Maxwell Acquisition

On May 16, 2019 (the "Acquisition Date"), we completed our strategic acquisition of Maxwell Technologies, Inc. ("Maxwell"), an energy storage and power delivery products company, for its complementary technology and workforce. Pursuant to the related Agreement and Plan of Merger, each issued and outstanding share of Maxwell common stock was converted into 0.0965 (the "Exchange Ratio") shares of our common stock, as adjusted to give effect to the Stock Split. In addition, Maxwell's stock option awards and restricted stock unit awards were assumed by us and converted into corresponding equity awards in respect of our common stock based on the Exchange Ratio, with the awards retaining the same vesting and other terms and conditions as in effect immediately prior to the acquisition.

Fair Value of Purchase Consideration

The Acquisition Date fair value of the purchase consideration was \$207 million (as adjusted to give effect to the Stock Split, 4,514,840 shares issued at \$45.90 per share, the opening price of our common stock on the Acquisition Date).

Fair Value of Assets Acquired and Liabilities Assumed

We accounted for the acquisition using the purchase method of accounting for business combinations under ASC 805, Business Combinations. The total purchase price was allocated to the tangible and identifiable intangible assets acquired and liabilities based on their estimated fair values as of the Acquisition Date.

Fair value estimates are based on a complex series of judgments about future events and uncertainties and rely heavily on estimates and assumptions. The judgments used to determine the estimated fair value assigned to each class of assets acquired and liabilities assumed, as well as asset lives and the expected future cash flows and related discount rates, can materially impact our consolidated financial statements. Significant inputs used for the model included the amount of cash flows, the expected period of the cash flows and the discount rates.

The allocation of the purchase price was based on management's estimate of the Acquisition Date fair values of the assets acquired and liabilities assumed, as follows (in millions):

Assets acquired:	
Cash and cash equivalents	\$ 32
Accounts receivable	24
Inventory	32
Property, plant and equipment, net	27
Operating lease right-of-use assets	10
Intangible assets	105
Prepaid expenses and other assets, current and non-current	3
Total assets acquired	233
Liabilities and equity assumed:	
Accounts payable	(10)
Accrued liabilities and other	(28)
Debt and finance leases, current and non-current	(44)
Deferred revenue, current	(1)
Other long-term liabilities	(14)
Additional paid-in capital	(8)
Total liabilities and equity assumed	(105)
Net assets acquired	128
Goodwill	79
Total purchase price	\$ 207

Goodwill represented the excess of the purchase price over the fair value of the net assets acquired and was primarily attributable to the expected synergies from integrating Maxwell's technology into our automotive segment as well as the acquired talent. Goodwill is not deductible for U.S. income tax purposes and is not amortized.

Identifiable Intangible Assets Acquired

The determination of the fair value of identified intangible assets and their respective useful lives were as follows (in millions, except for estimated useful life):

	<u>Fair Value</u>	<u>Useful Life (in years)</u>
Developed technology	\$ 102	9
Customer relations	2	9
Trade name	1	10
Total intangible assets	<u>\$ 105</u>	

Maxwell's results of operations since the Acquisition Date have been included within the automotive segment. Standalone and pro forma results of operations have not been presented because they were not material to the consolidated financial statements.

Other 2019 Acquisitions

During the year ended December 31, 2019, we completed various other acquisitions generally for the related technology and workforce. Total consideration for these acquisitions was \$96 million, of which \$80 million was paid in cash. In aggregate, \$36 million was attributed to intangible assets, \$51 million was attributed to goodwill within the automotive segment, and \$9 million was attributed to net assets assumed. Goodwill is not deductible for U.S. income tax purposes. The identifiable intangible assets were related to purchased technology, with estimated useful lives of one to nine years.

Standalone and pro forma results of operations have not been presented because they were not material to the consolidated financial statements, either individually or in aggregate.

Note 4 – Goodwill and Intangible Assets

Goodwill increased \$9 million within the automotive segment from \$198 million as of December 31, 2019 to \$207 million as of December 31, 2020 due to completed business combinations and foreign currency translation adjustments during the year ended December 31, 2020. There were no accumulated impairment losses as of December 31, 2020 and 2019.

Information regarding our intangible assets including assets recognized from our acquisitions was as follows (in millions):

	December 31, 2020				December 31, 2019			
	Gross Carrying Amount	Accumulated Amortization	Other	Net Carrying Amount	Gross Carrying Amount	Accumulated Amortization	Other	Net Carrying Amount
Finite-lived intangible assets:								
Developed technology	\$ 302	\$ (111)	\$ 3	\$ 194	\$ 291	\$ (72)	\$ 1	\$ 220
Trade names	3	(1)	—	2	3	(1)	1	3
Favorable contracts and leases, net	113	(32)	—	81	113	(24)	—	89
Other	38	(18)	1	21	38	(16)	—	22
Total finite-lived intangible assets	456	(162)	4	298	445	(113)	2	334
Indefinite-lived intangible assets:								
Gigafactory Nevada water rights	15	—	—	15	5	—	—	5
In-process research and development ("IPR&D")	—	—	—	—	60	—	(60)	—
Total indefinite-lived intangible assets	15	—	—	15	65	—	(60)	5
Total intangible assets	<u>\$ 471</u>	<u>\$ (162)</u>	<u>\$ 4</u>	<u>\$ 313</u>	<u>\$ 510</u>	<u>\$ (113)</u>	<u>\$ (58)</u>	<u>\$ 339</u>

Amortization expense during the years ended December 31, 2020, 2019 and 2018 was \$51 million, \$44 million and \$66 million, respectively.

Total future amortization expense for finite-lived intangible assets was estimated as follows (in millions):

2021	\$ 51
2022	50
2023	44
2024	29
2025	29
Thereafter	95
Total	<u>\$ 298</u>

Note 5 – Fair Value of Financial Instruments

ASC 820, *Fair Value Measurements*, states that fair value is an exit price, representing the amount that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants. As such, fair value is a market-based measurement that should be determined based on assumptions that market participants would use in pricing an asset or a liability. The three-tiered fair value hierarchy, which prioritizes which inputs should be used in measuring fair value, is comprised of: (Level I) observable inputs such as quoted prices in active markets; (Level II) inputs other than quoted prices in active markets that are observable either directly or indirectly and (Level III) unobservable inputs for which there is little or no market data. The fair value hierarchy requires the use of observable market data when available in determining fair value. Our assets and liabilities that were measured at fair value on a recurring basis were as follows (in millions):

	December 31, 2020				December 31, 2019			
	Fair Value	Level I	Level II	Level III	Fair Value	Level I	Level II	Level III
Money market funds (cash and cash equivalents)	\$ 13,847	\$ 13,847	\$ —	\$ —	\$ 1,632	\$ 1,632	\$ —	\$ —
Interest rate swap assets	—	—	—	—	1	—	1	—
Interest rate swap liabilities	58	—	58	—	(27)	—	(27)	—
Total	<u>\$ 13,905</u>	<u>\$ 13,847</u>	<u>\$ 58</u>	<u>\$ —</u>	<u>\$ 1,606</u>	<u>\$ 1,632</u>	<u>\$ (26)</u>	<u>\$ —</u>

All of our money market funds were classified within Level I of the fair value hierarchy because they were valued using quoted prices in active markets. Our interest rate swaps were classified within Level II of the fair value hierarchy because they were valued using alternative pricing sources or models that utilized market observable inputs, including current and forward interest rates.

Interest Rate Swaps

We enter into fixed-for-floating interest rate swap agreements to swap variable interest payments on certain debt for fixed interest payments, as required by certain of our lenders. We do not designate our interest rate swaps as hedging instruments. Accordingly, our interest rate swaps are recorded at fair value on the consolidated balance sheets within other non-current assets or other long-term liabilities, with any changes in their fair values recognized as other (expense) income, net, in the consolidated statements of operations and with any cash flows recognized as operating activities in the consolidated statements of cash flows. Our interest rate swaps outstanding were as follows (in millions):

	December 31, 2020			December 31, 2019		
	Aggregate Notional Amount	Gross Asset at Fair Value	Gross Liability at Fair Value	Aggregate Notional Amount	Gross Asset at Fair Value	Gross Liability at Fair Value
Interest rate swaps	\$ 554	\$ —	\$ 58	\$ 821	\$ 1	\$ 27

Our interest rate swaps activity was as follows (in millions):

	Year Ended December 31,		
	2020	2019	2018
Gross losses	\$ 42	\$ 51	\$ 12
Gross gains	\$ 6	\$ 11	\$ 22

Disclosure of Fair Values

Our financial instruments that are not re-measured at fair value include accounts receivable, MyPower customer notes receivable, accounts payable, accrued liabilities, customer deposits and debt. The carrying values of these financial instruments other than our 2021 Notes, 2022 Notes, 2024 Notes, our subsidiary's Zero-Coupon Convertible Senior Notes due in 2020 and our subsidiary's 5.50% Convertible Senior Notes due in 2022 (collectively referred to as "Convertible Senior Notes" below), 5.30% Senior Notes due in 2025 ("2025 Notes"), solar asset-backed notes and solar loan-backed notes approximate their fair values.

We estimate the fair value of the Convertible Senior Notes and the 2025 Notes using commonly accepted valuation methodologies and market-based risk measurements that are indirectly observable, such as credit risk (Level II). In addition, we estimate the fair values of our solar asset-backed notes and solar loan-backed notes based on rates currently offered for instruments with similar maturities and terms (Level III). The following table presents the estimated fair values and the carrying values (in millions):

	December 31, 2020		December 31, 2019	
	Carrying Value	Fair Value	Carrying Value	Fair Value
Convertible Senior Notes	\$ 1,971	\$ 24,596	\$ 3,729	\$ 6,110
2025 Notes	\$ 1,785	\$ 1,877	\$ 1,782	\$ 1,748
Solar asset-backed notes	\$ 1,115	\$ 1,137	\$ 1,155	\$ 1,211
Solar loan-backed notes	\$ 146	\$ 152	\$ 175	\$ 189

Note 6 – Inventory

Our inventory consisted of the following (in millions):

	December 31, 2020	December 31, 2019
Raw materials	\$ 1,508	\$ 1,428
Work in process	493	362
Finished goods (1)	1,666	1,356
Service parts	434	406
Total	<u>\$ 4,101</u>	<u>\$ 3,552</u>

- (1) Finished goods inventory includes vehicles in transit to fulfill customer orders, new vehicles available for sale, used vehicles, energy storage products and Solar Roof products available for sale.

For solar energy systems, we commence transferring component parts from inventory to construction in progress, a component of solar energy systems, once a lease or PPA contract with a customer has been executed and installation has been initiated. Additional costs incurred on the leased solar energy systems, including labor and overhead, are recorded within solar energy systems under construction.

We write-down inventory for any excess or obsolete inventories or when we believe that the net realizable value of inventories is less than the carrying value. During the years ended December 31, 2020, 2019 and 2018, we recorded write-downs of \$145 million, \$138 million and \$78 million, respectively, in cost of revenues.

Note 7 – Solar Energy Systems, Net

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

	December 31, 2020	December 31, 2019
Solar energy systems in service	\$ 6,758	\$ 6,682
Initial direct costs related to customer solar energy system lease acquisition costs	103	102
	6,861	6,784
Less: accumulated depreciation and amortization (1)	(955)	(723)
	5,906	6,061
Solar energy systems under construction	28	18
Solar energy systems pending interconnection	45	59
Solar energy systems, net (2)	<u>\$ 5,979</u>	<u>\$ 6,138</u>

- (1) Depreciation and amortization expense during the years ended December 31, 2020, 2019 and 2018 was \$232 million, \$227 million and \$276 million, respectively.
- (2) As of December 31, 2020 and 2019, solar energy systems, net, included \$36 million of gross finance leased assets with accumulated depreciation and amortization of \$7 million and \$6 million, respectively.

Note 8 – Property, Plant and Equipment, Net

Our property, plant and equipment, net, consisted of the following (in millions):

	December 31, 2020	December 31, 2019
Machinery, equipment, vehicles and office furniture	\$ 8,493	\$ 7,167
Tooling	1,811	1,493
Leasehold improvements	1,421	1,087
Land and buildings	3,662	3,024
Computer equipment, hardware and software	856	595
Construction in progress	1,621	764
	17,864	14,130
Less: Accumulated depreciation	(5,117)	(3,734)
Total	<u>\$ 12,747</u>	<u>\$ 10,396</u>

Construction in progress is primarily comprised of construction of Gigafactory Berlin and Gigafactory Texas, expansion of Gigafactory Shanghai and equipment and tooling related to the manufacturing of our products. We are currently constructing Gigafactory Berlin under conditional permits. Completed assets are transferred to their respective asset classes, and depreciation begins when an asset is ready for its intended use. Interest on outstanding debt is capitalized during periods of significant capital asset construction and amortized over the useful lives of the related assets. During the years ended December 31, 2020 and 2019, we capitalized \$48 million and \$31 million, respectively, of interest.

Depreciation expense during the years ended December 31, 2020, 2019 and 2018 was \$1.57 billion, \$1.37 billion and \$1.11 billion, respectively. Gross property, plant and equipment under finance leases as of December 31, 2020 and 2019 was \$2.28 billion and \$2.08 billion, respectively, with accumulated depreciation of \$816 million and \$483 million, respectively.

Panasonic has partnered with us on Gigafactory Nevada with investments in the production equipment that it uses to manufacture and supply us with battery cells. Under our arrangement with Panasonic, we plan to purchase the full output from their production equipment at negotiated prices. As the terms of the arrangement convey a finance lease under ASC 842, Leases, we account for their production equipment as leased assets when production commences. We account for each lease and any non-lease components associated with that lease as a single lease component for all asset classes, except production equipment classes embedded in supply agreements. This results in us recording the cost of their production equipment within property, plant and equipment, net, on the consolidated balance sheets with a corresponding liability recorded to debt and finance leases. Depreciation on Panasonic production equipment is computed using the units-of-production method whereby capitalized costs are amortized over the total estimated productive life of the respective assets. As of December 31, 2020 and 2019, we had cumulatively capitalized costs of \$1.77 billion and \$1.73 billion, respectively, on the consolidated balance sheets in relation to the production equipment under our Panasonic arrangement.

In 2019, the Shanghai government agreed to provide \$85 million of certain incentives in connection with us making certain manufacturing equipment investments at Gigafactory Shanghai, of which \$46 million was received in cash and the remaining \$39 million was in the form of assets and services contributed by the government. In 2020, the Shanghai government agreed to provide an additional \$122 million of such incentives. Of the total incentives provided between both years, \$123 million was received in cash in 2020. Proceeds from the grant must be spent on qualified capital investments at Gigafactory Shanghai as stipulated in the agreement. These incentives were taken as a reduction to property, plant and equipment, net, on the consolidated balance sheets and cash receipts are reflected as investing cash inflows on the consolidated statements of cash flows.

Note 9 – Accrued Liabilities and Other

As of December 31, 2020 and 2019, accrued liabilities and other current liabilities consisted of the following (in millions):

	December 31, 2020	December 31, 2019
Accrued purchases (1)	\$ 901	\$ 638
Taxes payable (2)	777	611
Payroll and related costs	654	466
Accrued warranty reserve, current portion	479	344
Sales return reserve, current portion	417	272
Operating lease liabilities, current portion	286	228
Accrued interest	77	86
Resale value guarantees, current portion	23	317
Other current liabilities	241	260
Total	<u>\$ 3,855</u>	<u>\$ 3,222</u>

- (1) Accrued purchases primarily reflects receipts of goods and services that we had not been invoiced yet. As we are invoiced for these goods and services, this balance will reduce and accounts payable will increase.
- (2) Taxes payable includes value added tax, sales tax, property tax, use tax and income tax payables.

Note 10 – Other Long-Term Liabilities

As of December 31, 2020 and 2019, other long-term liabilities consisted of the following (in millions):

	December 31, 2020	December 31, 2019
Operating lease liabilities	\$ 1,254	\$ 956
Accrued warranty reserve	989	745
Sales return reserve	500	545
Deferred tax liability	151	66
Resale value guarantees	19	36
Other non-current liabilities	417	343
Total other long-term liabilities	<u>\$ 3,330</u>	<u>\$ 2,691</u>

Note 11 – Customer Deposits

Customer deposits primarily consisted of cash payments from customers at the time they place an order or reservation for a vehicle or an energy product and any additional payments up to the point of delivery or the completion of installation, including the fair values of any customer trade-in vehicles that are applicable toward a new vehicle purchase. Customer deposits also include prepayments on contracts that can be cancelled without significant penalties, such as vehicle maintenance plans. Customer deposit amounts and timing vary depending on the vehicle model, the energy product and the country of delivery. In the case of a vehicle, customer deposits are fully refundable. In the case of an energy generation or storage product, customer deposits are fully refundable prior to the entry into a purchase agreement or in certain cases for a limited time thereafter (in accordance with applicable laws). Customer deposits are included in current liabilities until refunded or until they are applied towards the customer's purchase balance.

Note 12 – Debt

The following is a summary of our debt and finance leases as of December 31, 2020 (in millions):

	Net Carrying Value		Unpaid	Unused	Contractual Interest Rates	Contractual Maturity Date
	Current	Long-Term	Principal Balance	Committed Amount (1)		
Recourse debt:						
2021 Notes	\$ 419	—	422	—	1.25%	March 2021
2022 Notes	115	366	503	—	2.375%	March 2022
2024 Notes	171	856	1,282	—	2.00%	May 2024
2025 Notes	—	1,785	1,800	—	5.30%	August 2025
Credit Agreement	—	1,895	1,895	278	3.3%	July 2023
Solar Bonds and other Loans	4	49	55	—	3.6%-5.8%	January 2021 - January 2031
Total recourse debt	709	4,951	5,957	278		
Non-recourse debt:						
Automotive Asset-backed Notes	777	921	1,705	—	0.6%-7.9%	August 2021-August 2024
Solar Asset-backed Notes	39	1,076	1,141	—	3.0%-7.7%	September 2024-February 2048
China Loan Agreements	—	616	616	1,372	4.0%	June 2021-December 2024
Cash Equity Debt	18	408	439	—	5.3%-5.8%	July 2033-January 2035
Solar Loan-backed Notes	13	133	152	—	4.8%-7.5%	September 2048-September 2049
Warehouse Agreements	37	257	294	806	1.7%-1.8%	September 2022
Solar Term Loan	151	—	151	—	3.7%	January 2021
Automotive Lease-backed Credit Facilities	14	19	33	153	1.9%-5.9%	September 2022-November 2022
Solar Revolving Credit Facility and other Loans	—	81	81	23	2.7%-5.1%	June 2022-February 2033
Total non-recourse debt	1,049	3,511	4,612	2,354		
Total debt	1,758	8,462	\$ 10,569	\$ 2,632		
Finance leases	374	1,094				
Total debt and finance leases	\$ 2,132	\$ 9,556				

The following is a summary of our debt and finance leases as of December 31, 2019 (in millions):

	Net Carrying Value		Unpaid	Unused	Contractual Interest Rates	Contractual Maturity Date
	Current	Long-Term	Principal Balance	Committed Amount (1)		
Recourse debt:						
2021 Notes	\$ —	\$ 1,304	\$ 1,380	\$ —	1.25%	March 2021
2022 Notes	—	902	978	—	2.375%	March 2022
2024 Notes	—	1,383	1,840	—	2.00%	May 2024
2025 Notes	—	1,782	1,800	—	5.3%	August 2025
Credit Agreement	141	1,586	1,727	499	2.7%-4.8%	June 2020-July 2023
Zero-Coupon Convertible Senior Notes due in 2020	97	—	103	—	0.0%	December 2020
Solar Bonds and other Loans	15	53	70	—	3.6%-5.8%	March 2020-January 2031
Total recourse debt	253	7,010	7,898	499		
Non-recourse debt:						
Automotive Asset-backed Notes	573	997	1,577	—	2.0%-7.9%	February 2020- May 2023
Solar Asset-backed Notes	32	1,123	1,183	—	4.0%-7.7%	September 2024-February 2048
China Loan Agreements	444	297	741	1,542	3.7%-4.0%	September 2020-December 2024
Cash Equity Debt	10	430	454	—	5.3%-5.8%	July 2033-January 2035
Solar Loan-backed Notes	11	164	182	—	4.8%-7.5%	September 2048-September 2049
Warehouse Agreements	21	146	167	933	3.1%-3.6%	September 2021
Solar Term Loans	8	152	161	—	5.4%	January 2021
Automotive Lease-backed Credit Facility	24	16	40	—	4.2%-5.9%	November 2022
Solar Revolving Credit Facility and other Loans	23	67	89	6	4.5%-7.4%	March 2020-June 2022
Total non-recourse debt	1,146	3,392	4,594	2,481		
Total debt	1,399	10,402	\$ 12,492	\$ 2,980		
Finance leases	386	1,232				
Total debt and finance leases	\$ 1,785	\$ 11,634				

- (1) There are no restrictions on draw-down or use for general corporate purposes with respect to any available committed funds under our credit facilities and financing funds, except certain specified conditions prior to draw-down, including pledging to our lenders sufficient amounts of qualified receivables, inventories, leased vehicles and our interests in those leases, solar energy systems and the associated customer contracts, our interests in financing funds or various other assets and as may be further described below.

Recourse debt refers to debt that is recourse to our general assets. Non-recourse debt refers to debt that is recourse to only assets of our subsidiaries. The differences between the unpaid principal balances and the net carrying values are due to convertible senior note conversion features, debt discounts or deferred financing costs. As of December 31, 2020, we were in material compliance with all financial debt covenants, which include minimum liquidity and expense-coverage balances and ratios.

2021 Notes, Bond Hedges and Warrant Transactions

In March 2014, we issued \$1.20 billion in aggregate principal amount of our 2021 Notes in a public offering. In April 2014, we issued an additional \$180 million in aggregate principal amount of the notes, pursuant to the exercise in full of the overallotment options by the underwriters. The total net proceeds from the issuances, after deducting transaction costs, were \$1.36 billion.

As adjusted to give effect to the Stock Split, each \$1,000 of principal of these notes is now convertible into 13.8940 shares of our common stock, which is equivalent to a conversion price of \$71.97 per share, subject to adjustment upon the occurrence of specified events. Holders of these notes have been able to elect to convert on or after December 1, 2020. The settlement of such an election to convert the outstanding notes would be in cash for the principal amount and, if applicable, cash and/or shares of our common stock for any conversion premium at our election. As of December 1, 2020, holders of these notes have the option to convert. Such holders also had the option to convert prior to December 1, 2020 under the circumstances further described below. Upon the early conversion of the 2021 Notes, we will pay cash for the principal amount and deliver shares of our common stock based on a daily conversion value. If a fundamental change occurs prior to the applicable maturity date, holders of these notes may require us to repurchase all or a portion of their notes for cash at a repurchase price equal to 100% of the principal amount plus any accrued and unpaid interest. In addition, if specific corporate events occur prior to the applicable maturity date, we would increase the conversion rate for a holder who elects to convert their notes in connection with such an event in certain circumstances.

In accordance with GAAP relating to embedded conversion features, we initially valued and bifurcated the conversion features associated with these notes. We recorded to stockholders' equity \$369 million for the conversion feature. The resulting debt discount is being amortized to interest expense at an effective interest rate of 5.96%.

In connection with the offering of these notes in March and April 2014, we entered into convertible note hedge transactions whereby we had the option to purchase 19.2 million shares of our common stock at a price of \$71.97 per share, as adjusted to give effect to the Stock Split. The total cost of the convertible note hedge transactions was \$398 million. In addition, we sold warrants whereby the holders of the warrants have the option to purchase 19.2 million shares of our common stock at a price of \$112.13 per share, as adjusted to give effect to the Stock Split. We received \$257 million in total cash proceeds from the sales of these warrants. Taken together, the purchases of the convertible note hedges and the sales of the warrants are intended to reduce potential dilution and/or cash payments from the conversion of these notes and to effectively increase the overall conversion from \$71.97 to \$112.13 per share, as adjusted to give effect to the Stock Split. As these transactions meet certain accounting criteria, the convertible note hedges and warrants are recorded in stockholders' equity and are not accounted for as derivatives. The net cost incurred in connection with the convertible note hedge and warrant transactions was recorded as a reduction to additional paid-in capital on the consolidated balance sheet.

During each of the quarters of 2020, the closing price of our common stock exceeded 130% of the applicable conversion price of the 2021 Notes on at least 20 of the last 30 consecutive trading days of the quarter, causing the 2021 Notes to be convertible by their holders during the second, third and fourth quarters of 2020. As the settlement of conversion of the 2021 Notes is in cash for the principal amount and, if applicable, cash and/or shares of our common stock for any conversion premium at our election, we reclassified \$3 million, representing the difference between the aggregate principal of our 2021 Notes and the carrying value as of December 31, 2020, as mezzanine equity from permanent equity on our consolidated balance sheet as of December 31, 2020. The debt discounts recorded on the 2021 Notes are recognized as interest expense through March 2021 and early conversions have resulted in the acceleration of such recognition through December 31, 2020, including the losses on extinguishment of debt appearing in the Interest Expense table below.

During the year ended December 31, 2020, \$958 million in aggregate principal amount of the 2021 Notes were converted for \$958 million in cash and 11.1 million shares of our common stock, as adjusted to give effect to the Stock Split. As a result, we recorded a decrease to additional paid-in capital of \$6 million. The note hedges we entered into in connection with the issuance of the 2021 Notes were automatically settled with the respective conversions of the notes, resulting in the receipt of 11.1 million shares of our common stock, as adjusted to give effect to the Stock Split. The related warrants will settle under their terms after the maturity or settlement of the related convertible debt. The remaining notes outstanding are expected to convert in the first quarter of fiscal year 2021. As of December 31, 2020, the if-converted value of the 2021 Notes exceeds the outstanding principal amount by \$3.71 billion.

2022 Notes, Bond Hedges and Warrant Transactions

In March 2017, we issued \$978 million in aggregate principal amount of our 2022 Notes in a public offering. The net proceeds from the issuance, after deducting transaction costs, were \$966 million.

As adjusted to give effect to the Stock Split, each \$1,000 of principal of the 2022 Notes is convertible into 15.2670 shares of our common stock, which is equivalent to a conversion price of \$65.50 per share, subject to adjustment upon the occurrence of specified events. Holders of the 2022 Notes may convert, at their option, on or after December 15, 2021. Further, holders of the 2022 Notes may convert, at their option, prior to December 15, 2021 only under the following circumstances: (1) during any quarter beginning after June 30, 2017, if the closing price of our common stock for at least 20 trading days (whether or not consecutive) during the last 30 consecutive trading days immediately preceding the quarter is greater than or equal to 130% of the conversion price; (2) during the five-business day period following any five-consecutive trading day period in which the trading price of the 2022 Notes is less than 98% of the product of the closing price of our common stock and the applicable conversion rate for each day during such five-consecutive trading day period or (3) if we make specified distributions to holders of our common stock or if specified corporate transactions occur. Upon a conversion, the 2022 Notes will be settled in cash, shares of our common stock or a combination thereof, at our election. If a fundamental change occurs prior to the maturity date, holders of the 2022 Notes may require us to repurchase all or a portion of their 2022 Notes for cash at a repurchase price equal to 100% of the principal amount plus any accrued and unpaid interest. In addition, if specific corporate events occur prior to the maturity date, we would increase the conversion rate for a holder who elects to convert its 2022 Notes in connection with such an event in certain circumstances.

In accordance with GAAP relating to embedded conversion features, we initially valued and bifurcated the conversion feature associated with the 2022 Notes. We recorded to stockholders' equity \$146 million for the conversion feature. The resulting debt discount is being amortized to interest expense at an effective interest rate of 6.00%.

In connection with the offering of the 2022 Notes, we entered into convertible note hedge transactions whereby we had the option to purchase 14.9 million shares of our common stock at a price of \$65.50 per share as adjusted to give effect to the Stock Split. The cost of the convertible note hedge transactions was \$204 million. In addition, we sold warrants whereby the holders of the warrants have the option to purchase 14.9 million shares of our common stock at a price of \$131.00 per share. We received \$53 million in cash proceeds from the sale of these warrants. Taken together, the purchase of the convertible note hedges and the sale of the warrants are intended to reduce potential dilution from the conversion of the 2022 Notes and to effectively increase the overall conversion price from \$65.50 to \$131.00 per share, as adjusted to give effect to the Stock Split. As these transactions meet certain accounting criteria, the convertible note hedges and warrants are recorded in stockholders' equity and are not accounted for as derivatives. The net cost incurred in connection with the convertible note hedge and warrant transactions was recorded as a reduction to additional paid-in capital on the consolidated balance sheet.

During each of the quarters of 2020, the closing price of our common stock exceeded 130% of the applicable conversion price of the 2022 Notes on at least 20 of the last 30 consecutive trading days of the quarter, causing the 2022 Notes to be convertible by their holders during the second, third and fourth quarters of 2020 and the first quarter of 2021. As we now expect to settle a portion of the 2022 Notes in the first quarter of 2021, we reclassified \$115 million of the carrying value of the 2022 Notes from debt and finance leases, net of current portion to current portion of debt and finance leases on our consolidated balance sheet as of December 31, 2020. Additionally, we reclassified \$5 million, representing the difference between the current portion of aggregate principal of our 2022 Notes and the current portion of the carrying value as of December 31, 2020, as mezzanine equity from permanent equity on our consolidated balance sheet as of December 31, 2020. As the settlement of conversion of the remainder of the 2022 Notes would be in cash, shares of our common stock or a combination thereof is at our election, the remaining liability is classified as non-current. The debt discounts recorded on the 2022 Notes are recognized as interest expense through March 2022 and early conversions have resulted in the acceleration of such recognition through December 31, 2020, including the losses on extinguishment of debt appearing in the Interest Expense table below.

During the year ended December 31, 2020, \$474 million in aggregate principal amount of the 2022 Notes were converted for \$474 million in cash and 6.2 million shares of our common stock, as adjusted to give effect to the Stock Split. As a result, we recorded a decrease to additional paid-in capital of \$5 million. The note hedges we entered into in connection with the issuance of the 2022 Notes were automatically settled with the respective conversions of the 2022 Notes, resulting in the receipt of 6.2 million shares of our common stock, as adjusted to give effect to the Stock Split. The related warrants will settle under their terms after the maturity or settlement of the 2022 Notes. As of December 31, 2020, the if-converted value of the notes exceeds the outstanding principal amount by \$4.92 billion.

2024 Notes, Bond Hedges and Warrant Transactions

In May 2019, we issued \$1.84 billion in aggregate principal amount of our 2024 Notes in a public offering. The net proceeds from the issuance, after deducting transaction costs, were \$1.82 billion.

As adjusted to give effect to the Stock Split, each \$1,000 of principal of the 2024 Notes is convertible into 16.1380 shares of our common stock, which is equivalent to a conversion price of \$61.97 per share, subject to adjustment upon the occurrence of specified events. Holders of the 2024 Notes may convert, at their option, on or after February 15, 2024. Further, holders of the 2024 Notes may convert, at their option, prior to February 15, 2024 only under the following circumstances: (1) during any calendar quarter commencing after September 30, 2019 (and only during such calendar quarter), if the last reported sale price of our common stock for at least 20 trading days (whether or not consecutive) during a period of 30 consecutive trading days ending on the last trading day of immediately preceding calendar quarter is greater than or equal to 130% of the conversion price on each trading day; (2) during the five-business day period after any five-consecutive trading day period in which the trading price per \$1,000 principal amount of the 2024 Notes for each trading day of such period is less than 98% of the product of the last reported sale price of our common stock and the conversion rate on each such trading day, or (3) if specified corporate events occur. Upon conversion, the 2024 Notes will be settled in cash, shares of our common stock or a combination thereof, at our election. If a fundamental change occurs prior to the maturity date, holders of the 2024 Notes may require us to repurchase all or a portion of their 2024 Notes for cash at a repurchase price equal to 100% of the principal amount plus any accrued and unpaid interest. In addition, if specific corporate events occur prior to the maturity date, we would increase the conversion rate for a holder who elects to convert its 2024 Notes in connection with such an event in certain circumstances.

In accordance with GAAP relating to embedded conversion features, we initially valued and bifurcated the conversion feature associated with the 2024 Notes. We recorded to stockholders' equity \$491 million for the conversion feature. The resulting debt discount is being amortized to interest expense at an effective interest rate of 8.68%.

In connection with the offering of the 2024 Notes, we entered into convertible note hedge transactions whereby we had the option to purchase 29.7 million shares of our common stock at a price of \$61.97 per share as adjusted to give effect to the Stock Split. The cost of the convertible note hedge transactions was \$476 million. In addition, we sold warrants whereby the holders of the warrants have the option to purchase 29.7 million shares of our common stock at a price of \$121.50 per share, as adjusted to give effect to the Stock Split. We received \$174 million in cash proceeds from the sale of these warrants. Taken together, the purchase of the convertible note hedges and the sale of the warrants are intended to reduce potential dilution from the conversion of the 2024 Notes and to effectively increase the overall conversion price from \$61.97 to \$121.50 per share. As these transactions meet certain accounting criteria, the convertible note hedges and warrants are recorded in stockholders' equity and are not accounted for as derivatives. The net cost incurred in connection with the convertible note hedge and warrant transactions was recorded as a reduction to additional paid-in capital on the consolidated balance sheet.

During each of the quarters of 2020, the closing price of our common stock exceeded 130% of the applicable conversion price of the 2024 Notes on at least 20 of the last 30 consecutive trading days of the quarter, causing the 2024 Notes to be convertible by their holders during the second, third and fourth quarters of 2020 and the first quarter of 2021. As we now expect to settle a portion of the 2024 Notes in the first quarter of 2021, we reclassified \$171 million, of the carrying value of the 2024 Notes from debt and finance leases, net of current portion to current portion of debt and finance leases on our consolidated balance sheet as of December 31, 2020. Additionally, we reclassified \$43 million, representing the difference between the current portion of aggregate principal of our 2024 Notes and the current portion of the carrying value as of December 31, 2020, as mezzanine equity from permanent equity on our consolidated balance sheet as of December 31, 2020. As the settlement of conversion of the remainder of the 2024 Notes would be in cash, shares of our common stock or a combination thereof is at our election, the remaining liability is classified as non-current. The debt discounts recorded on the 2024 Notes are recognized as interest expense through May 2024 and early conversions have resulted in the acceleration of such recognition through December 31, 2020, including the losses on extinguishment of debt appearing in the Interest Expense table below.

During the year ended December 31, 2020, \$558 million in aggregate principal amount of the 2024 Notes were converted for \$558 million in cash and 8.0 million shares of our common stock, as adjusted to give effect to the Stock Split. As a result, we recorded a decrease to additional paid-in capital of \$31 million. The note hedges we entered into in connection with the issuance of the 2024 Notes were automatically settled with the respective conversions of the 2024 Notes, resulting in the receipt of 8.0 million shares of our common stock, as adjusted to give effect to the Stock Split. The related warrants will settle under their terms after the maturity or settlement of the 2024 Notes. As of December 31, 2020, the if-converted value of the notes exceeds the outstanding principal amount by \$13.32 billion.

2025 Notes

In August 2017, we issued \$1.80 billion in aggregate principal amount of the 2025 Notes pursuant to Rule 144A and Regulation S under the Securities Act. The net proceeds from the issuance, after deducting transaction costs, were \$1.77 billion.

Credit Agreement

In June 2015, we entered into a senior asset-based revolving credit agreement (as amended from time to time, the "Credit Agreement") with a syndicate of banks. Borrowed funds bear interest, at our option, at an annual rate of (a) 1% plus LIBOR or (b) the highest of (i) the federal funds rate plus 0.50%, (ii) the lenders' "prime rate" or (iii) 1% plus LIBOR. The fee for undrawn amounts is 0.25% per annum. The Credit Agreement is secured by certain of our accounts receivable, inventory and equipment. Availability under the Credit Agreement is based on the value of such assets, as reduced by certain reserves.

In March 2020, we upsized the Credit Agreement by \$100 million, which matures July 2023, to \$2.525 billion. In June 2020, \$197 million of commitment under the Credit Agreement expired in accordance with its terms and the total commitment decreased to \$2.328 billion .

Zero-Coupon Convertible Senior Notes due in 2020

In December 2015, SolarCity Corporation ("SolarCity") issued \$113 million in aggregate principal amount of Zero-Coupon Convertible Senior Notes due on December 1, 2020 in a private placement. \$13 million of these notes were issued to related parties.

As adjusted to give effect to the Stock Split, each \$1,000 of principal of these notes was convertible into 16.6665 shares of our common stock, which is equivalent to a conversion price of \$60.00 per share (subject to adjustment upon the occurrence of specified events related to dividends, tender offers or exchange offers). The maximum conversion rate is capped at 21.1538 shares for each \$1,000 of principal of these notes, which is equivalent to a minimum conversion price of \$47.27 per share. The convertible senior notes do not have a cash conversion option. The holders of these notes were able to require us to repurchase their notes for cash only under certain defined fundamental changes. On or after June 30, 2017, these notes are redeemable by us in the event that the closing price of our common stock exceeds 200% of the conversion price for 45 consecutive trading days ending within three trading days of such redemption notice at a redemption price equal to 100% of the principal amount plus any accrued and unpaid interest.

During the year ended December 31, 2020, \$103 million in aggregate principal amount of these notes were converted for 1.7 million shares of our common stock, as adjusted to give effect to the Stock Split. As a result, we recorded an increase to additional paid-in capital of \$101 million.

Solar Bonds and other Loans

Solar Bonds are senior unsecured obligations that are structurally subordinate to the indebtedness and other liabilities of our subsidiaries. Solar Bonds were issued under multiple series with various terms and interest rates. Additionally, we have assumed the 5.50% Convertible Senior Notes due in 2022 issued by Maxwell (the “Maxwell Notes”), which are convertible into shares of our common stock as a result of our acquisition of Maxwell. As of December 31, 2020, the if-converted value of the Maxwell Notes exceeds the outstanding principal amount by \$447 million.

Automotive Asset-backed Notes

From time to time, we transfer receivables or beneficial interests related to certain leased vehicles into special purpose entities (“SPEs”) and issue Automotive Asset-backed Notes, backed by these automotive assets to investors. The SPEs are consolidated in the financial statements. The cash flows generated by these automotive assets are used to service the principal and interest payments on the Automotive Asset-backed Notes and satisfy the SPEs’ expenses, and any remaining cash is distributed to the owners of the SPEs. We recognize revenue earned from the associated customer lease contracts in accordance with our revenue recognition policy. The SPEs’ assets and cash flows are not available to our other creditors, and the creditors of the SPEs, including the Automotive Asset-backed Note holders, have no recourse to our other assets. A third party contracted with us to provide administrative and collection services for these automotive assets.

In August 2020, we transferred beneficial interests related to certain leased vehicles into an SPE and issued \$709 million in aggregate principal amount of Automotive Asset-backed Notes, with terms similar to our other Automotive Asset-backed Notes. The proceeds from the issuance, net of discounts and fees, were \$706 million.

Solar Asset-backed Notes

From time to time, our subsidiaries pool and transfer either qualifying solar energy systems and the associated customer contracts or our interests in certain financing funds into SPEs and issue Solar Asset-backed Notes backed by these solar assets or interests to investors. The SPEs are wholly owned by us and are consolidated in the financial statements. The cash flows generated by these solar assets or distributed by the underlying financing funds to certain SPEs are used to service the principal and interest payments on the Solar Asset-backed Notes and satisfy the SPEs’ expenses, and any remaining cash is distributed to us. We recognize revenue earned from the associated customer contracts in accordance with our revenue recognition policy. The SPEs’ assets and cash flows are not available to our other creditors, and the creditors of the SPEs, including the Solar Asset-backed Note holders, have no recourse to our other assets. We contracted with the SPEs to provide operations & maintenance and administrative services for the solar energy systems. As of December 31, 2020, solar assets pledged as collateral for Solar Asset-backed Notes had a carrying value of \$660 million and are included within solar energy systems, net, on the consolidated balance sheet.

China Loan Agreements

In September 2019, one of our subsidiaries entered into a loan agreement with a lender in China for an unsecured 12-month revolving facility of up to RMB 5.0 billion (or the equivalent drawn in U.S. dollars), to finance vehicles in-transit to China (the “In-transit Finance Facility”). Borrowed funds incurred interest at an annual rate no greater than 90% of the one-year rate published by the People’s Bank of China. The loan facility is non-recourse to our assets. In September 2020, the In-transit Finance Facility matured.

In December 2019, one of our subsidiaries entered into loan agreements with a syndicate of lenders in China for: (i) a secured term loan facility of up to RMB 9.0 billion or the equivalent amount drawn in U.S. dollars (the “Fixed Asset Facility”) and (ii) an unsecured revolving loan facility of up to RMB 2.25 billion or the equivalent amount drawn in U.S. dollars (the “Working Capital Facility”), in each case to be used in connection with our construction of and production at our Gigafactory Shanghai. Outstanding borrowings pursuant to the Fixed Asset Facility accrue interest at a rate equal to: (i) for RMB-denominated loans, the market quoted interest rate published by the People’s Bank of China minus 0.7625%, and (ii) for U.S. dollar-denominated loans, the sum of one-year LIBOR plus 1.3%. Outstanding borrowings pursuant to the Working Capital Facility incurred interest at a rate equal to the market quoted interest rate published by the People’s Bank of China minus 0.4525 %. The Fixed Asset Facility is secured by certain real property relating to Gigafactory Shanghai and both facilities are non-recourse to our other assets. In December 2020, the Working Capital Facility matured.

In May 2020, one of our subsidiaries entered into an additional Working Capital Loan Contract (the “2020 China Working Capital Facility”) with a lender in China for an unsecured revolving facility of up to RMB 4.00 billion (or the equivalent amount drawn in U.S. dollars), to be used for expenditures related to production at our Gigafactory Shanghai. Borrowed funds bear interest at an annual rate of: (i) for RMB-denominated loans, the market quoted interest rate published by an authority designated by the People’s Bank of China minus 0.35%, (ii) for U.S. dollar-denominated loans, the sum of one-year LIBOR plus 0.8%. The 2020 China Working Capital Facility is non-recourse to our assets and is scheduled to mature in June 2021, the first anniversary of the first borrowing under the loan.

Cash Equity Debt

In connection with the cash equity financing deals closed in 2016, our subsidiaries issued \$502 million in aggregate principal amount of debt that bears interest at fixed rates. This debt is secured by, among other things, our interests in certain financing funds and is non-recourse to our other assets.

Solar Loan-backed Notes

In January 2016 and January 2017, our subsidiaries pooled and transferred certain MyPower customer notes receivable into two SPEs and issued \$330 million in aggregate principal amount of Solar Loan-backed Notes, backed by these notes receivable to investors. Accordingly, we did not recognize a gain or loss on the transfer of these notes receivable. The SPEs are wholly owned by us and are consolidated in the financial statements. The payments received by the SPEs from these notes receivable are used to service the semi-annual principal and interest payments on the Solar Loan-backed Notes and satisfy the SPEs’ expenses, and any remaining cash is distributed to us. The SPEs’ assets and cash flows are not available to our other creditors, and the creditors of the SPEs, including the Solar Loan-backed Note holders, have no recourse to our other assets.

Warehouse Agreements

In August 2016, our subsidiaries entered into a loan and security agreement (as amended from time to time, the “2016 Warehouse Agreement”) for borrowings secured by the future cash flows arising from certain leases and the associated leased vehicles. On August 17, 2017, the 2016 Warehouse Agreement was amended to modify the interest rates and extend the availability period and the maturity date, and our subsidiaries entered into another loan and security agreement (the “2017 Warehouse Agreement”) with substantially the same terms as and that shared the same committed amount with the 2016 Warehouse Agreement. On August 16, 2018, the 2016 Warehouse Agreement and 2017 Warehouse Agreement were amended to extend the availability periods thereunder from August 17, 2018 to August 16, 2019 and extend the maturity dates from September 2019 to September 2020. On December 28, 2018, our subsidiaries terminated the 2017 Warehouse Agreement after having fully repaid all obligations thereunder, and entered into a third loan and security agreement with substantially the same terms as and that shared the same committed amount with the 2016 Warehouse Agreement (the “2018 Warehouse Agreement”). We refer to these agreements together as the “Warehouse Agreements”. Amounts drawn under the Warehouse Agreements generally bear or bore interest at a fixed margin above (i) LIBOR or (ii) the commercial paper rate. The Warehouse Agreements are or were non-recourse to our other assets.

In August 2020, one of our subsidiaries terminated the 2018 Warehouse Agreement after having fully repaid all obligations thereunder, leaving the 2016 Warehouse Agreement as the only remaining Warehouse Agreement. In August 2020, we further amended and restated the 2016 Warehouse Agreement to extend the maturity date to September 2022. The 2016 Warehouse Agreement currently has an aggregate lender commitment of \$1.10 billion, the same amount as the aggregate lender commitment previously shared with the 2018 Warehouse Agreement prior to the termination of the latter.

Pursuant to the Warehouse Agreements, an undivided beneficial interest in the future cash flows arising from certain leases and the related leased vehicles has been sold for legal purposes but continues to be reported in the consolidated financial statements. The interest in the future cash flows arising from these leases and the related vehicles is not available to pay the claims of our creditors other than pursuant to obligations to the lenders under the Warehouse Agreements. Any excess cash flows not required to pay obligations under the Warehouse Agreements are or were available for distributions.

Solar Term Loans

Our subsidiaries have entered into agreements for term loans with various financial institutions. The term loans are secured by substantially all of the assets of the subsidiaries, including its interests in certain financing funds, and are non-recourse to our other assets.

Automotive Lease-backed Credit Facilities

In December 2016, one of our subsidiaries entered into a credit agreement (the “Canada Credit Facility”) with a bank for borrowings secured by our interests in certain vehicle leases. In December 2017 and December 2018, the Canada Credit Facility was amended to add our interests in additional vehicle leases as collateral, allowing us to draw additional funds. Amounts drawn under the Canada Credit Facility bear interest at fixed rates. The Canada Credit Facility is non-recourse to our other assets.

In September 2020, an SPE entered into a revolving credit facility with a bank for borrowings secured by the beneficial interests related to certain leased vehicles that we transferred to the SPE. Amounts drawn under this facility bear interest at 1.85% plus LIBOR and are non-recourse to our other assets.

Solar Revolving Credit Facility and other Loans

We have entered into various solar revolving credit facility and other loan agreements with various financial institutions. The solar revolving credit facility is secured by certain assets of the subsidiary and is non-recourse to our other assets.

Interest Expense

The following table presents the interest expense related to the contractual interest coupon, the amortization of debt issuance costs, the amortization of debt discounts and losses on extinguishment of debt on our convertible senior notes with cash conversion features, which include the 1.50% Convertible Senior Notes due in 2018 (matured in June 2018), the 2019 Notes (matured in March 2019), the 2021 Notes, the 2022 Notes and the 2024 Notes (in millions):

	Year Ended December 31,		
	2020	2019	2018
Contractual interest coupon	\$ 73	\$ 65	\$ 43
Amortization of debt issuance costs	7	7	7
Amortization of debt discounts	173	148	123
Losses on extinguishment of debt	105	—	—
Total	<u>\$ 358</u>	<u>\$ 220</u>	<u>\$ 173</u>

Pledged Assets

As of December 31, 2020 and 2019, we had pledged or restricted \$6.04 billion and \$5.72 billion of our assets (consisting principally of restricted cash, receivables, inventory, SRECs, solar energy systems, operating lease vehicles, land use rights, property and equipment, and equity interests in certain SPEs) as collateral for our outstanding debt.

Schedule of Principal Maturities of Debt

The future scheduled principal maturities of debt as of December 31, 2020 were as follows (in millions):

	Recourse debt	Non-recourse debt	Total
2021	\$ 760	\$ 1,058	\$ 1,818
2022	427	1,508	1,935
2023	1,895	511	2,406
2024	1,068	783	1,851
2025	1,804	175	1,979
Thereafter	3	577	580
Total	<u>\$ 5,957</u>	<u>\$ 4,612</u>	<u>\$ 10,569</u>

Note 13 – Leases

We have entered into various operating and finance lease agreements for certain of our offices, manufacturing and warehouse facilities, retail and service locations, equipment, vehicles, and solar energy systems, worldwide. We determine if an arrangement is a lease, or contains a lease, at inception and record the leases in our financial statements upon lease commencement, which is the date when the underlying asset is made available for use by the lessor.

We have lease agreements with lease and non-lease components, and have elected to utilize the practical expedient to account for lease and non-lease components together as a single combined lease component, from both a lessee and lessor perspective with the exception of direct sales-type leases and production equipment classes embedded in supply agreements. From a lessor perspective, the timing and pattern of transfer are the same for the non-lease components and associated lease component and, the lease component, if accounted for separately, would be classified as an operating lease.

We have elected not to present short-term leases on the consolidated balance sheet as these leases have a lease term of 12 months or less at lease inception and do not contain purchase options or renewal terms that we are reasonably certain to exercise. All other lease assets and lease liabilities are recognized based on the present value of lease payments over the lease term at commencement date. Because most of our leases do not provide an implicit rate of return, we used our incremental borrowing rate based on the information available at lease commencement date in determining the present value of lease payments.

Our leases, where we are the lessee, often include options to extend the lease term for up to 10 years. Some of our leases also include options to terminate the lease prior to the end of the agreed upon lease term. For purposes of calculating lease liabilities, lease terms include options to extend or terminate the lease when it is reasonably certain that we will exercise such options.

Lease expense for operating leases is recognized on a straight-line basis over the lease term as cost of revenues or operating expenses depending on the nature of the leased asset. Certain operating leases provide for annual increases to lease payments based on an index or rate. We calculate the present value of future lease payments based on the index or rate at the lease commencement date for new leases commencing after January 1, 2019. For historical leases, we used the index or rate as of January 1, 2019. Differences between the calculated lease payment and actual payment are expensed as incurred. Amortization of finance lease assets is recognized over the lease term as cost of revenues or operating expenses depending on the nature of the leased asset. Interest expense on finance lease liabilities is recognized over the lease term in interest expense.

The balances for the operating and finance leases where we are the lessee are presented as follows (in millions) within our consolidated balance sheet:

	<u>December 31, 2020</u>	<u>December 31, 2019</u>
Operating leases:		
Operating lease right-of-use assets	\$ 1,558	\$ 1,218
Accrued liabilities and other	\$ 286	\$ 228
Other long-term liabilities	1,254	956
Total operating lease liabilities	<u>\$ 1,540</u>	<u>\$ 1,184</u>
Finance leases:		
Solar energy systems, net	\$ 29	\$ 30
Property, plant and equipment, net	1,465	1,600
Total finance lease assets	<u>\$ 1,494</u>	<u>\$ 1,630</u>
Current portion of long-term debt and finance leases	\$ 374	\$ 386
Long-term debt and finance leases, net of current portion	1,094	1,232
Total finance lease liabilities	<u>\$ 1,468</u>	<u>\$ 1,618</u>

The components of lease expense are as follows (in millions) within our consolidated statements of operations:

	Year Ended	
	December 31, 2020	December 31, 2019
Operating lease expense:		
Operating lease expense (1)	\$ 451	\$ 426
Finance lease expense:		
Amortization of leased assets	\$ 348	\$ 299
Interest on lease liabilities	100	104
Total finance lease expense	\$ 448	\$ 403
Total lease expense	\$ 899	\$ 829

(1) Includes short-term leases and variable lease costs, which are immaterial.

Other information related to leases where we are the lessee is as follows:

	December 31, 2020	December 31, 2019
Weighted-average remaining lease term:		
Operating leases	6.2 years	6.2 years
Finance leases	4.9 years	3.9 years
Weighted-average discount rate:		
Operating leases	5.8%	6.5%
Finance leases	6.5%	6.5%

Supplemental cash flow information related to leases where we are the lessee is as follows (in millions):

	Year Ended	
	December 31, 2020	December 31, 2019
Cash paid for amounts included in the measurement of lease liabilities:		
Operating cash outflows from operating leases	\$ 456	\$ 396
Operating cash outflows from finance leases (interest payments)	\$ 100	\$ 104
Financing cash outflows from finance leases	\$ 338	\$ 321
Leased assets obtained in exchange for finance lease liabilities	\$ 188	\$ 616
Leased assets obtained in exchange for operating lease liabilities	\$ 553	\$ 202

As of December 31, 2020, the maturities of our operating and finance lease liabilities (excluding short-term leases) are as follows (in millions):

	Operating Leases	Finance Leases
2021	\$ 366	\$ 462
2022	327	446
2023	279	412
2024	245	299
2025	204	9
Thereafter	425	7
Total minimum lease payments	1,846	1,635
Less: Interest	306	167
Present value of lease obligations	1,540	1,468
Less: Current portion	286	374
Long-term portion of lease obligations	\$ 1,254	\$ 1,094

Operating Lease and Sales-type Lease Receivables

We are the lessor of certain vehicle and solar energy system arrangements as described in Note 2, *Summary of Significant Accounting Policies*. As of December 31, 2020, maturities of our operating lease and sales-type lease receivables from customers for each of the next five years and thereafter were as follows (in millions):

	Operating Leases	Sales-type Leases
2021	\$ 774	\$ 21
2022	594	21
2023	351	21
2024	206	30
2025	191	5
Thereafter	2,102	4
Gross lease receivables	<u>\$ 4,218</u>	<u>\$ 102</u>

The above table does not include vehicle sales to customers or leasing partners with a resale value guarantee as the cash payments were received upfront. For our solar PPA arrangements, customers are charged solely based on actual power produced by the installed solar energy system at a predefined rate per kilowatt-hour of power produced. The future payments from such arrangements are not included in the above table as they are a function of the power generated by the related solar energy systems in the future.

Net Investment in Sales-type Leases

Net investment in sales-type leases, which is the sum of the present value of the future contractual lease payments, is presented on the consolidated balance sheet as a component of prepaid expenses and other current assets for the current portion and as other assets for the long-term portion. We introduced sales-type leasing programs in volume during the third quarter of 2020 and therefore have no associated balances as of December 31, 2019. Lease receivables relating to sales-type leases are presented on the consolidated balance sheet as follows (in millions):

	December 31, 2020
Gross lease receivables	\$ 102
Unearned interest income	(11)
Net investment in sales-type leases	<u>\$ 91</u>
Reported as:	
Prepaid expenses and other current assets	\$ 17
Other assets	74
Net investment in sales-type leases	<u>\$ 91</u>

Note 14 – Equity Incentive Plans

In June 2019, we adopted the 2019 Equity Incentive Plan (the “2019 Plan”). The 2019 Plan provides for the grant of stock options, restricted stock, RSUs, stock appreciation rights, performance units and performance shares to our employees, directors and consultants. Stock options granted under the 2019 Plan may be either incentive stock options or nonstatutory stock options. Incentive stock options may only be granted to our employees. Nonstatutory stock options may be granted to our employees, directors and consultants. Generally, our stock options and RSUs vest over four years and our stock options are exercisable over a maximum period of 10 years from their grant dates. Vesting typically terminates when the employment or consulting relationship ends.

As of December 31, 2020, 49.0 million shares were reserved and available for issuance under the 2019 Plan, as adjusted to give effect to the Stock Split.

The following table summarizes our stock option and RSU activity:

	Stock Options				RSUs	
	Number of Options (in thousands)	Weighted-Average Exercise Price	Weighted-Average Remaining Contractual Life (years)	Aggregate Intrinsic Value (in billions)	Number of RSUs (in thousands)	Weighted-Average Grant Date Fair Value
Balance,						
December 31, 2019 (1)	149,974	\$ 55.90			24,031	\$ 58.21
Granted	4,780	\$ 421.73			6,876	\$ 300.51
Exercised or released	(6,815)	\$ 44.11			(9,620)	\$ 72.26
Cancelled	(1,006)	\$ 68.67			(2,498)	\$ 82.31
Balance,						
December 31, 2020	<u>146,933</u>	\$ 68.26	6.08	\$ 93.66	<u>18,789</u>	\$ 136.49
Vested and expected to vest,						
December 31, 2020	101,617	\$ 69.04	5.80	\$ 64.69	18,778	\$ 136.53
Exercisable and vested,						
December 31, 2020	66,205	\$ 46.88	4.89	\$ 43.61		

(1) Prior period results have been adjusted to give effect to the Stock Split. See Note 1, *Overview*, for details.

The weighted-average grant date fair value of RSUs in the years ended December 31, 2020, 2019 and 2018 was \$300.51, \$56.55 and \$63.29, respectively, as adjusted to give effect to the Stock Split. The aggregate release date fair value of RSUs in the years ended December 31, 2020, 2019 and 2018 was \$3.25 billion, \$502 million and \$546 million, respectively.

The aggregate intrinsic value of options exercised in the years ended December 31, 2020, 2019, and 2018 was \$1.55 billion, \$237 million and \$293 million, respectively.

ESPP

Our employees are eligible to purchase our common stock through payroll deductions of up to 15% of their eligible compensation, subject to any plan limitations. The purchase price would be 85% of the lower of the fair market value on the first and last trading days of each six-month offering period. During the years ended December 31, 2020, 2019 and 2018, we issued 1.8 million, 2.5 million and 2.0 million shares under the ESPP, as adjusted to give effect to the Stock Split. There were 34.3 million shares available for issuance under the ESPP as of December 31, 2020.

Fair Value Assumptions

We use the fair value method in recognizing stock-based compensation expense. Under the fair value method, we estimate the fair value of each stock option award with service or service and performance conditions and the ESPP on the grant date generally using the Black-Scholes option pricing model. The weighted-average assumptions used in the Black-Scholes model for stock options are as follows:

	Year Ended December 31,		
	2020	2019	2018
Risk-free interest rate	0.26%	2.4%	2.5%
Expected term (in years)	3.9	4.5	4.7
Expected volatility	69%	48%	42%
Dividend yield	0.0%	0.0%	0.0%
Grant date fair value per share (1)	\$ 216.14	\$ 22.32	\$ 24.38

(1) Prior period results have been adjusted to give effect to the Stock Split. See Note 1, *Overview*, for details.

The fair value of RSUs with service or service and performance conditions is measured on the grant date based on the closing fair market value of our common stock. The risk-free interest rate is based on the U.S. Treasury yield for zero-coupon U.S. Treasury notes with maturities approximating each grant's expected life. We use our historical data in estimating the expected term of our employee grants. The expected volatility is based on the average of the implied volatility of publicly traded options for our common stock and the historical volatility of our common stock.

2018 CEO Performance Award

In March 2018, our stockholders approved the Board of Directors' grant of 101.3 million stock option awards to our CEO (the "2018 CEO Performance Award"), as adjusted to give effect to the Stock Split. The 2018 CEO Performance Award consists of 12 vesting tranches with a vesting schedule based entirely on the attainment of both operational milestones (performance conditions) and market conditions, assuming continued employment either as the CEO or as both Executive Chairman and Chief Product Officer and service through each vesting date. Each of the 12 vesting tranches of the 2018 CEO Performance Award will vest upon certification by the Board of Directors that both (i) the market capitalization milestone for such tranche, which begins at \$100.0 billion for the first tranche and increases by increments of \$50.0 billion thereafter (based on both a six calendar month trailing average and a 30 calendar day trailing average, counting only trading days), has been achieved, and (ii) any one of the following eight operational milestones focused on total revenue or any one of the eight operational milestones focused on Adjusted EBITDA have been achieved for the previous four consecutive fiscal quarters on an annualized basis. Adjusted EBITDA is defined as net income (loss) attributable to common stockholders before interest expense, provision (benefit) for income taxes, depreciation and amortization and stock-based compensation. Upon vesting and exercise, including the payment of the exercise price of \$70.01 per share as adjusted to give effect to the Stock Split, our CEO must hold shares that he acquires for five years post-exercise, other than a cashless exercise where shares are simultaneously sold to pay for the exercise price and any required tax withholding.

The achievement status of the operational milestones as of December 31, 2020 was as follows:

Total Annualized Revenue			Annualized Adjusted EBITDA		
Milestone (in billions)	Achievement Status		Milestone (in billions)	Achievement Status	
\$ 20.0	Achieved and certified		\$ 1.5	Achieved and certified	
\$ 35.0	Probable		\$ 3.0	Achieved and certified	
\$ 55.0	-		\$ 4.5	Achieved and certified	
\$ 75.0	-		\$ 6.0	Probable	
\$ 100.0	-		\$ 8.0	Probable	
\$ 125.0	-		\$ 10.0	-	
\$ 150.0	-		\$ 12.0	-	
\$ 175.0	-		\$ 14.0	-	

Stock-based compensation under the 2018 CEO Performance Award represents a non-cash expense and is recorded as a selling, general, and administrative operating expense in our consolidated statement of operations. In each quarter since the grant of the 2018 CEO Performance Award, we have recognized expense, generally on a pro-rated basis, for only the number of tranches (up to the maximum of 12 tranches) that corresponds to the number of operational milestones that have been achieved or have been determined probable of being achieved in the future, in accordance with the following principles.

On the grant date, a Monte Carlo simulation was used to determine for each tranche (i) a fixed amount of expense for such tranche and (ii) the future time when the market capitalization milestone for such tranche was expected to be achieved, or its "expected market capitalization milestone achievement time." Separately, based on a subjective assessment of our future financial performance, each quarter we determine whether it is probable that we will achieve each operational milestone that has not previously been achieved or deemed probable of achievement and if so, the future time when we expect to achieve that operational milestone, or its "expected operational milestone achievement time." When we first determine that an operational milestone has become probable of being achieved, we allocate the entire expense for the related tranche over the number of quarters between the grant date and the then-applicable "expected vesting time." The "expected vesting time" at any given time is the later of (i) the expected operational milestone achievement time (if the related operational milestone has not yet been achieved) and (ii) the expected market capitalization milestone achievement time (if the related market capitalization milestone has not yet been achieved). We immediately recognize a catch-up expense for all accumulated expense for the quarters from the grant date through the quarter in which the operational milestone was first deemed probable of being achieved. Each quarter thereafter, we recognize the prorated portion of the then-remaining expense for the tranche based on the number of quarters between such quarter and the then-applicable expected vesting time, except that upon vesting of a tranche, all remaining expense for that tranche is immediately recognized.

As a result, we have experienced, and may experience in the future, significant catch-up expenses in quarters when one or more operational milestones are first determined to be probable of being achieved. Additionally, the expected market capitalization achievement times are generally later than the related expected operational milestone achievement times. Therefore, if market capitalization milestones are achieved earlier than originally forecasted, for example due to periods of rapid stock price appreciation, this has resulted, and may result in the future, in higher catch-up expenses and the remaining expenses being recognized over shorter periods of time at a higher per-quarter rate.

During the three months ended June 30, 2020, the first tranche of the 2018 CEO Performance Award vested upon certification by the Board of Directors that the market capitalization milestone of \$100.0 billion and the operational milestone of \$20.0 billion annualized revenue had been achieved. Therefore, the remaining unamortized expense of \$22 million for that tranche, which was previously expected to be recognized ratably in future quarters as determined on the grant date, was accelerated into the second quarter of 2020. Additionally, the operational milestone of annualized Adjusted EBITDA of \$4.5 billion became probable of being achieved during the second quarter of 2020 and consequently, we recognized a catch-up expense of \$79 million in that quarter.

During the three months ended September 30, 2020, the second and third tranches of the 2018 CEO Performance Award vested upon certification by the Board of Directors that the market capitalization milestones of \$150.0 billion and \$200.0 billion and the operational milestones of annualized Adjusted EBITDA of \$1.5 billion and annualized Adjusted EBITDA of \$3.0 billion had been achieved. Therefore, the remaining unamortized expense of \$95 million and \$118 million associated with the second and third tranches, respectively, which were previously expected to be recognized ratably in future quarters as determined on the grant date were accelerated into the third quarter of 2020. Additionally, the operational milestone of annualized Adjusted EBITDA of \$6.0 billion became probable of being achieved during the third quarter of 2020 and consequently, we recognized a catch-up expense of \$77 million in that quarter.

During the three months ended December 31, 2020, the fourth tranche of the 2018 CEO Performance Award vested upon certification by the Board of Directors that the market capitalization milestone of \$250.0 billion and the operational milestone of annualized Adjusted EBITDA of \$4.5 billion had been achieved. Therefore, the remaining unamortized expense of \$122 million for that tranche, which was previously expected to be recognized ratably in future quarters through the third quarter of 2023 as determined on the grant date, was accelerated into the fourth quarter of 2020. Additionally, during the fourth quarter of 2020, the operational milestone of annualized Adjusted EBITDA of \$8.0 billion became probable of being achieved and consequently, we recognized a catch-up expense of \$75 million in that quarter.

As of December 31, 2020, we had \$264 million of total unrecognized stock-based compensation expense for the operational milestones that were considered either probable of achievement or achieved but not yet certified, which will be recognized over a weighted-average period of 0.6 years. As of December 31, 2020, we had unrecognized stock-based compensation expense of \$712 million for the operational milestones that were considered not probable of achievement. For the years ended December 31, 2020, 2019 and 2018 we recorded stock-based compensation expense of \$838 million, \$296 million and \$175 million related to the 2018 CEO Performance Award.

2014 Performance-Based Stock Option Awards

In 2014, to create incentives for continued long-term success beyond the Model S program and to closely align executive pay with our stockholders' interests in the achievement of significant milestones by us, the Compensation Committee of our Board of Directors granted stock option awards to certain employees (excluding our CEO) to purchase an aggregate of 5.4 million shares of our common stock, as adjusted to give effect to the Stock Split. Each award consisted of the following four vesting tranches with the vesting schedule based entirely on the attainment of the future performance milestones, assuming continued employment and service through each vesting date:

- 1/4th of each award vests upon completion of the first Model X production vehicle;
- 1/4th of each award vests upon achieving aggregate production of 100,000 vehicles in a trailing 12-month period;
- 1/4th of each award vests upon completion of the first Model 3 production vehicle; and
- 1/4th of each award vests upon achieving an annualized gross margin of greater than 30% for any three-year period.

As of December 31, 2020, the following performance milestones had been achieved:

- Completion of the first Model X production vehicle;
- Completion of the first Model 3 production vehicle; and
- Aggregate production of 100,000 vehicles in a trailing 12-month period.

We begin recognizing stock-based compensation expense as each performance milestone becomes probable of achievement. As of December 31, 2020, we had unrecognized stock-based compensation expense of \$4 million for the performance milestone that was considered not probable of achievement. For the years ended December 31, 2020, 2019 and 2018, we did not record any additional stock-based compensation related to the 2014 Performance-Based Stock Option Awards.

2012 CEO Performance Award

In August 2012, our Board of Directors granted 26.4 million stock option awards to our CEO (the “2012 CEO Performance Award”), as adjusted to give effect to the Stock Split. The 2012 CEO Performance Award consists of 10 vesting tranches with a vesting schedule based entirely on the attainment of both performance conditions and market conditions, assuming continued employment and service through each vesting date. Each vesting tranche requires a combination of a pre-determined performance milestone and an incremental increase in our market capitalization of \$4.00 billion, as compared to our initial market capitalization of \$3.20 billion at the time of grant. As of December 31, 2020, the market capitalization conditions for all of the vesting tranches and the following performance milestones had been achieved:

- Successful completion of the Model X alpha prototype;
- Successful completion of the Model X beta prototype;
- Completion of the first Model X production vehicle;
- Aggregate production of 100,000 vehicles;
- Successful completion of the Model 3 alpha prototype;
- Successful completion of the Model 3 beta prototype;
- Completion of the first Model 3 production vehicle;
- Aggregate production of 200,000 vehicles; and
- Aggregate production of 300,000 vehicles.

We begin recognizing stock-based compensation expense as each milestone becomes probable of achievement. As of December 31, 2020, we had unrecognized stock-based compensation expense of \$6 million for the performance milestone that was considered not probable of achievement. For the years ended December 31, 2020 and 2019, we did not record any additional stock-based compensation expense related to the 2012 CEO Performance Award. For the year ended December 31, 2018, the stock-based compensation we recorded related to this award was immaterial.

Summary Stock-Based Compensation Information

The following table summarizes our stock-based compensation expense by line item in the consolidated statements of operations (in millions):

	Year Ended December 31,		
	2020	2019	2018
Cost of revenues	\$ 281	\$ 128	\$ 109
Research and development	346	285	261
Selling, general and administrative	1,107	482	375
Restructuring and other	—	3	4
Total	<u>\$ 1,734</u>	<u>\$ 898</u>	<u>\$ 749</u>

Our income tax benefits recognized from stock-based compensation arrangements in each of the periods presented were immaterial due to cumulative losses and valuation allowances. During the years ended December 31, 2020, 2019, and 2018, stock-based compensation expense capitalized to our consolidated balance sheets was \$89 million, \$52 million and \$18 million, respectively. As of December 31, 2020, we had \$3.51 billion of total unrecognized stock-based compensation expense related to non-performance awards, which will be recognized over a weighted-average period of 2.7 years.

Note 15 – Income Taxes

A provision for income taxes of \$292 million, \$110 million and \$58 million has been recognized for the years ended December 31, 2020, 2019 and 2018, respectively, related primarily to our subsidiaries located outside of the U.S. Our income (loss) before provision for income taxes for the years ended December 31, 2020, 2019 and 2018 was as follows (in millions):

	Year Ended December 31,		
	2020	2019	2018
Domestic	\$ (198)	\$ (287)	\$ (412)
Noncontrolling interest and redeemable noncontrolling interest	141	87	(87)
Foreign	1,211	(465)	(506)
Income (loss) before income taxes	<u>\$ 1,154</u>	<u>\$ (665)</u>	<u>\$ (1,005)</u>

The components of the provision for income taxes for the years ended December 31, 2020, 2019 and 2018 consisted of the following (in millions):

	Year Ended December 31,		
	2020	2019	2018
Current:			
Federal	\$ —	\$ —	\$ (1)
State	4	5	3
Foreign	248	86	24
Total current	<u>252</u>	<u>91</u>	<u>26</u>
Deferred:			
Federal	—	(4)	—
State	—	—	—
Foreign	40	23	32
Total deferred	<u>40</u>	<u>19</u>	<u>32</u>
Total provision for income taxes	<u>\$ 292</u>	<u>\$ 110</u>	<u>\$ 58</u>

Deferred tax assets (liabilities) as of December 31, 2020 and 2019 consisted of the following (in millions):

	December 31, 2020	December 31, 2019
Deferred tax assets:		
Net operating loss carry-forwards	\$ 2,172	\$ 1,846
Research and development credits	624	486
Other tax credits	168	126
Deferred revenue	450	301
Inventory and warranty reserves	315	243
Stock-based compensation	98	102
Operating lease right-of-use liabilities	335	290
Deferred GILTI tax assets	581	—
Accruals and others	205	16
Total deferred tax assets	<u>4,948</u>	<u>3,410</u>
Valuation allowance	<u>(2,930)</u>	<u>(1,956)</u>
Deferred tax assets, net of valuation allowance	<u>2,018</u>	<u>1,454</u>
Deferred tax liabilities:		
Depreciation and amortization	(1,488)	(1,185)
Investment in certain financing funds	(198)	(17)
Operating lease right-of-use assets	(305)	(263)
Deferred revenue	(50)	—
Other	(61)	(24)
Total deferred tax liabilities	<u>(2,102)</u>	<u>(1,489)</u>
Deferred tax liabilities, net of valuation allowance and deferred tax assets	<u>\$ (84)</u>	<u>\$ (35)</u>

As of December 31, 2020, we recorded a valuation allowance of \$2.93 billion for the portion of the deferred tax asset that we do not expect to be realized. The valuation allowance on our net deferred taxes increased by \$974 million, increased by \$150 million, and decreased by \$38 million during the years ended December 31, 2020, 2019 and 2018, respectively. The changes in valuation allowance are primarily due to additional U.S. deferred tax assets and liabilities incurred in the respective year. We have net \$260 million of deferred tax assets in foreign jurisdictions, which management believes are more-likely-than-not to be fully realized given the expectation of future earnings in these jurisdictions. We did not have material release of valuation allowance for the years ended December 31, 2020, 2019 and 2018. We continue to monitor the realizability of the U.S. deferred tax assets taking into account multiple factors, including the results of operations and magnitude of excess tax deductions for stock-based compensation. We intend to continue maintaining a full valuation allowance on our U.S. deferred tax assets until there is sufficient evidence to support the reversal of all or some portion of these allowances. Given the improvement in our operating results and depending on the amount of stock-based compensation tax deduction available in the future, we may release the valuation allowance associated with the U.S. deferred tax assets in the next few years. Release of all, or a portion, of the valuation allowance would result in the recognition of certain deferred tax assets and a decrease to income tax expense for the period the release is recorded.

The reconciliation of taxes at the federal statutory rate to our provision for income taxes for the years ended December 31, 2020, 2019 and 2018 was as follows (in millions):

	Year Ended December 31,		
	2020	2019	2018
Tax at statutory federal rate	\$ 242	\$ (139)	\$ (211)
State tax, net of federal benefit	4	5	3
Nondeductible executive compensations	184	62	39
Other nondeductible expenses	52	32	26
Excess tax benefits related to stock based compensation	(666)	(7)	(44)
Foreign income rate differential	33	189	161
U.S. tax credits	(181)	(107)	(80)
Noncontrolling interests and redeemable noncontrolling interests adjustment	5	(29)	32
GILTI inclusion	133	—	—
Convertible debt	—	(4)	—
Unrecognized tax benefits	1	17	1
Change in valuation allowance	485	91	131
Provision for income taxes	<u>\$ 292</u>	<u>\$ 110</u>	<u>\$ 58</u>

As of December 31, 2020, we had \$9.65 billion of federal and \$6.60 billion of state net operating loss carry-forwards available to offset future taxable income, which will not begin to significantly expire until 2024 for federal and 2031 for state purposes. A portion of these losses were generated by SolarCity and some of the companies we acquired, and therefore are subject to change of control provisions, which limit the amount of acquired tax attributes that can be utilized in a given tax year. We do not expect these change of control limitations to significantly impact our ability to utilize these attributes.

As of December 31, 2020, we had research and development tax credits of \$417 million and \$373 million for federal and state income tax purposes, respectively. If not utilized, the federal research and development tax credits will expire in various amounts beginning in 2024. However, the state of California research and development tax credits can be carried forward indefinitely. In addition, we have other general business tax credits of \$167 million for federal income tax purposes, which will not begin to significantly expire until 2033.

Federal and state laws can impose substantial restrictions on the utilization of net operating loss and tax credit carry-forwards in the event of an “ownership change,” as defined in Section 382 of the Internal Revenue Code. We have determined that no significant limitation would be placed on the utilization of our net operating loss and tax credit carry-forwards due to prior ownership changes.

The local government of Shanghai granted a beneficial corporate income tax rate of 15% to certain eligible enterprises, compared to the 25% statutory corporate income tax rate in China. Our Gigafactory Shanghai subsidiary was granted this beneficial income tax rate of 15% for 2019 through 2023.

No deferred tax liabilities for foreign withholding taxes have been recorded relating to the earnings of our foreign subsidiaries since all such earnings are intended to be indefinitely reinvested. The amount of the unrecognized deferred tax liability associated with these earnings is immaterial.

Uncertain Tax Positions

The changes to our gross unrecognized tax benefits were as follows (in millions):

December 31, 2017	\$	199
Decreases in balances related to prior year tax positions		(6)
Increases in balances related to current year tax positions		60
December 31, 2018		253
Decreases in balances related to prior year tax positions		(39)
Increases in balances related to current year tax positions		59
December 31, 2019		273
Increases in balances related to prior year tax positions		66
Increases in balances related to current year tax positions		41
December 31, 2020	\$	<u>380</u>

As of December 31, 2020, accrued interest and penalties related to unrecognized tax benefits are classified as income tax expense and were immaterial. Unrecognized tax benefits of \$353 million, if recognized, would not affect our effective tax rate since the tax benefits would increase a deferred tax asset that is currently fully offset by a full valuation allowance.

We file income tax returns in the U.S., California and various state and foreign jurisdictions. We are currently under examination by the IRS for the years 2015 to 2018. Additional tax years within the period 2004 to 2014 and 2019 remain subject to examination for federal income tax purposes, and tax years 2004 to 2019 remain subject to examination for California income tax purposes. All net operating losses and tax credits generated to date are subject to adjustment for U.S. federal and California income tax purposes. Tax years 2008 to 2019 remain subject to examination in other U.S. state and foreign jurisdictions.

The potential outcome of the current examination could result in a change to unrecognized tax benefits within the next twelve months. However, we cannot reasonably estimate possible adjustments at this time.

The U.S. Tax Court issued a decision in *Altera Corp v. Commissioner* related to the treatment of stock-based compensation expense in a cost-sharing arrangement. On June 7, 2019, the Ninth Circuit Court of Appeals (Ninth Circuit) reversed the Tax Court decision and upheld the validity of Treas. Reg. Section 1.482-7A(d)(2), requiring stock-based compensation costs be included in the costs shared under a cost sharing agreement. On June 22, 2020, the U.S. Supreme Court denied to review the Ninth Circuit decision. Prior to the U.S. Supreme Court's denial, Tesla has already included stock-based compensation in cost sharing allocation agreement and hence retains its position.

Note 16 – Commitments and Contingencies

Operating Lease Arrangement in Buffalo, New York

We have an operating lease through the Research Foundation for the State University of New York (the "SUNY Foundation") with respect to Gigafactory New York. Under the lease and a related research and development agreement, we are continuing to designate further buildouts at the facility. The SUNY Foundation covered (i) construction costs related to the manufacturing facility up to \$350 million, (ii) the acquisition and commissioning of the manufacturing equipment in an amount up to \$275 million and (iii) \$125 million for additional specified scope costs, in cases (i) and (ii) only, subject to the maximum funding allocation from the State of New York; and we were responsible for any construction or equipment costs in excess of such amounts. The SUNY Foundation owns the manufacturing facility and the manufacturing equipment purchased by the SUNY Foundation. Following completion of the manufacturing facility, we have commenced leasing of the manufacturing facility and the manufacturing equipment owned by the SUNY Foundation for an initial period of 10 years, with an option to renew, for \$2.00 per year plus utilities.

Under this agreement, we are obligated to, among other things, meet employment targets as well as specified minimum numbers of personnel in the State of New York and in Buffalo, New York and spend or incur \$5.00 billion in combined capital, operational expenses, costs of goods sold and other costs in the State of New York during the 10-year period beginning April 30, 2018. On an annual basis during the initial lease term, as measured on each anniversary of such date, if we fail to meet these specified investment and job creation requirements, then we would be obligated to pay a \$41 million "program payment" to the SUNY Foundation for each year that we fail to meet these requirements. Furthermore, if the arrangement is terminated due to a material breach by us, then additional amounts may become payable by us.

As we temporarily suspended most of our manufacturing operations at Gigafactory New York pursuant to a New York State executive order issued in March 2020 as a result of the COVID-19 pandemic, we were granted a one-year deferral of our obligation to be compliant with our applicable targets under such agreement on April 30, 2020, which was memorialized in an amendment to our agreement with the SUNY Foundation in July 2020. Moreover, we had exceeded our investment and employment obligations under this agreement prior to such mandated reduction of operations. We do not currently expect any issues meeting all applicable future obligations under this agreement. However, if our expectations as to the costs and timelines of our investment and operations at Buffalo or our production ramp of the Solar Roof prove incorrect, we may incur additional expenses or substantial payments to the SUNY Foundation.

Operating Lease Arrangement in Shanghai, China

We have an operating lease arrangement for an initial term of 50 years with the local government of Shanghai for land use rights where we are constructing Gigafactory Shanghai. Under the terms of the arrangement, we are required to spend RMB 14.08 billion in capital expenditures, and to generate RMB 2.23 billion of annual tax revenues starting at the end of 2023. If we are unwilling or unable to meet such target or obtain periodic project approvals, in accordance with the Chinese government's standard terms for such arrangements, we would be required to revert the site to the local government and receive compensation for the remaining value of the land lease, buildings and fixtures. We believe the capital expenditure requirement and the tax revenue target will be attainable even if our actual vehicle production was far lower than the volumes we are forecasting.

Legal Proceedings

Securities Litigation Relating to the SolarCity Acquisition

Between September 1, 2016 and October 5, 2016, seven lawsuits were filed in the Delaware Court of Chancery by purported stockholders of Tesla challenging our acquisition of SolarCity Corporation ("SolarCity"). Following consolidation, the lawsuit names as defendants the members of Tesla's board of directors as then constituted and alleges, among other things, that board members breached their fiduciary duties in connection with the acquisition. The complaint asserts both derivative claims and direct claims on behalf of a purported class and seeks, among other relief, unspecified monetary damages, attorneys' fees, and costs. On January 27, 2017, defendants filed a motion to dismiss the operative complaint. Rather than respond to the defendants' motion, the plaintiffs filed an amended complaint. On March 17, 2017, defendants filed a motion to dismiss the amended complaint. On December 13, 2017, the Court heard oral argument on the motion. On March 28, 2018, the Court denied defendants' motion to dismiss. Defendants filed a request for interlocutory appeal, and the Delaware Supreme Court denied that request without ruling on the merits but electing not to hear an appeal at this early stage of the case. Defendants filed their answer on May 18, 2018, and mediations were held on June 10, 2019. Plaintiffs and defendants filed respective motions for summary judgment on August 25, 2019, and further mediations were held on October 3, 2019. The Court held a hearing on the motions for summary judgment on November 4, 2019. On January 22, 2020, all of the director defendants except Elon Musk reached a settlement to resolve the lawsuit against them for an amount that would be paid entirely under the applicable insurance policy. The settlement, which does not involve an admission of any wrongdoing by any party, was approved by the Court on August 17, 2020. Tesla received payment of approximately \$43 million on September 16, 2020, which has been recognized in our consolidated statement of operations as a reduction to selling, general and administrative operating expenses for costs previously incurred in the securities litigation related to the acquisition of SolarCity. On February 4, 2020, the Court issued a ruling that denied plaintiffs' previously-filed motion and granted in part and denied in part defendants' previously-filed motion. Fact and expert discovery is complete, and the case was set for trial in March 2020 until it was postponed by the Court due to safety precautions concerning COVID-19. The current tentative dates for the trial are from July 12 to July 23, 2021, subject to change based on any further safety measures implemented by the Court.

These plaintiffs and others filed parallel actions in the U.S. District Court for the District of Delaware on or about April 21, 2017. They include claims for violations of the federal securities laws and breach of fiduciary duties by Tesla's board of directors. Those actions have been consolidated and stayed pending the above-referenced Chancery Court litigation.

We believe that claims challenging the SolarCity acquisition are without merit and intend to defend against them vigorously. We are unable to estimate the possible loss or range of loss, if any, associated with these claims.

Securities Litigation Relating to Production of Model 3 Vehicles

On October 10, 2017, a purported stockholder class action was filed in the U.S. District Court for the Northern District of California against Tesla, two of its current officers, and a former officer. The complaint alleges violations of federal securities laws and seeks unspecified compensatory damages and other relief on behalf of a purported class of purchasers of Tesla securities from May 4, 2016 to October 6, 2017. The lawsuit claims that Tesla supposedly made materially false and misleading statements regarding Tesla's preparedness to produce Model 3 vehicles. Plaintiffs filed an amended complaint on March 23, 2018, and defendants filed a motion to dismiss on May 25, 2018. The court granted defendants' motion to dismiss with leave to amend. Plaintiffs filed their amended complaint on September 28, 2018, and defendants filed a motion to dismiss the amended complaint on February 15, 2019. The hearing on the motion to dismiss was held on March 22, 2019, and on March 25, 2019, the Court ruled in favor of defendants and dismissed the complaint with prejudice. On April 8, 2019, plaintiffs filed a notice of appeal and on July 17, 2019 filed their opening brief. We filed our opposition on September 16, 2019. A hearing on the appeal before the U.S. Court of Appeals for the Ninth Circuit ("Ninth Circuit") was held on April 30, 2020. On January 26, 2021, the Ninth Circuit affirmed the District Court's dismissal of the stockholder claims. We continue to believe that the claims are without merit and intend to defend against this lawsuit vigorously. We are unable to estimate the possible loss or range of loss, if any, associated with this lawsuit.

On October 26, 2018, in a similar action, a purported stockholder class action was filed in the Superior Court of California in Santa Clara County against Tesla, Elon Musk, and seven initial purchasers in an offering of debt securities by Tesla in August 2017. The complaint alleges misrepresentations made by Tesla regarding the number of Model 3 vehicles Tesla expected to produce by the end of 2017 in connection with such offering and seeks unspecified compensatory damages and other relief on behalf of a purported class of purchasers of Tesla securities in such offering. Tesla thereafter removed the case to federal court. On January 22, 2019, plaintiff abandoned its effort to proceed in state court, instead filing an amended complaint against Tesla, Elon Musk and seven initial purchasers in the debt offering before the same judge in the U.S. District Court for the Northern District of California who is hearing the above-referenced earlier filed federal case. On February 5, 2019, the Court stayed this new case pending a ruling on the motion to dismiss the complaint in such earlier filed federal case. After such earlier filed federal case was dismissed, defendants filed a motion on July 2, 2019 to dismiss this case as well. This case is now stayed pending a ruling from the Ninth Circuit on the earlier filed federal case with an agreement that if defendants prevail on appeal in such case, this case will be dismissed. We believe that the claims are without merit and intend to defend against this lawsuit vigorously. We are unable to estimate the possible loss or range of loss, if any, associated with this lawsuit.

Litigation Relating to 2018 CEO Performance Award

On June 4, 2018, a purported Tesla stockholder filed a putative class and derivative action in the Delaware Court of Chancery against Elon Musk and the members of Tesla's board of directors as then constituted, alleging corporate waste, unjust enrichment, and that such board members breached their fiduciary duties by approving the stock-based compensation plan. The complaint seeks, among other things, monetary damages and rescission or reformation of the stock-based compensation plan. On August 31, 2018, defendants filed a motion to dismiss the complaint; plaintiff filed its opposition brief on November 1, 2018 and defendants filed a reply brief on December 13, 2018. The hearing on the motion to dismiss was held on May 9, 2019. On September 20, 2019, the Court granted the motion to dismiss as to the corporate waste claim but denied the motion as to the breach of fiduciary duty and unjust enrichment claims. Our answer was filed on December 3, 2019, and trial is set for April 2022. Fact discovery is ongoing. We believe the claims asserted in this lawsuit are without merit and intend to defend against them vigorously. We are unable to estimate the possible loss or range of loss, if any, associated with this lawsuit.

Litigation Related to Directors' Compensation

On June 17, 2020, a purported Tesla stockholder filed a derivative action in the Delaware Court of Chancery, purportedly on behalf of Tesla, against certain of Tesla's current and former directors regarding compensation awards granted to Tesla's directors, other than Elon Musk, between 2017 and 2020. The suit asserts claims for breach of fiduciary duty and unjust enrichment and seeks declaratory and injunctive relief, unspecified damages, and other relief. Defendants filed their answer on September 17, 2020. Trial is set for September 2022, and fact discovery is ongoing. We believe that the claims are without merit and intend to defend against this lawsuit vigorously. We are unable to estimate the possible loss or range of loss, if any, associated with this lawsuit.

Securities Litigation Relating to Potential Going Private Transaction

Between August 10, 2018 and September 6, 2018, nine purported stockholder class actions were filed against Tesla and Elon Musk in connection with Mr. Musk's August 7, 2018 Twitter post that he was considering taking Tesla private. All of the suits are now pending in the U.S. District Court for the Northern District of California. Although the complaints vary in certain respects, they each purport to assert claims for violations of federal securities laws related to Mr. Musk's statement and seek unspecified compensatory damages and other relief on behalf of a purported class of purchasers of Tesla's securities. Plaintiffs filed their consolidated complaint on January 16, 2019 and added as defendants the members of Tesla's board of directors. The now-consolidated purported stockholder class action was stayed while the issue of selection of lead counsel was briefed and argued before the Ninth Circuit. The Ninth Circuit ruled regarding lead counsel. Defendants filed a motion to dismiss the complaint on November 22, 2019. The hearing on the motion was held on March 6, 2020. On April 15, 2020, the Court denied defendants' motion to dismiss. The parties stipulated to certification of a class of stockholders, which the court granted on November 25, 2020. Trial is set for May 2022. We believe that the claims have no merit and intend to defend against them vigorously. We are unable to estimate the potential loss, or range of loss, associated with these claims.

Between October 17, 2018 and November 9, 2018, five derivative lawsuits were filed in the Delaware Court of Chancery against Mr. Musk and the members of Tesla's board of directors as then constituted in relation to statements made and actions connected to a potential going private transaction. In addition to these cases, on October 25, 2018, another derivative lawsuit was filed in the U.S. District Court for the District of Delaware against Mr. Musk and the members of the Tesla board of directors as then constituted. The Courts in both the Delaware federal court and Delaware Court of Chancery actions have consolidated their respective actions and stayed each consolidated action pending resolution of the above-referenced consolidated purported stockholder class action. We believe that the claims have no merit and intend to defend against them vigorously. We are unable to estimate the potential loss or range of loss, if any, associated with these lawsuits.

Beginning on March 7, 2019, various stockholders filed derivative suits in the Delaware Court of Chancery, purportedly on behalf of Tesla, naming Mr. Musk and Tesla's board of directors as then constituted, also related to Mr. Musk's August 7, 2018 Twitter post that is the basis of the above-referenced consolidated purported stockholder class action, as well as to Mr. Musk's February 19, 2019 Twitter post regarding Tesla's vehicle production. The suit asserts claims for breach of fiduciary duty and seeks declaratory and injunctive relief, unspecified damages, and other relief. Plaintiffs agreed to a stipulation that these derivative cases would be stayed pending the outcome of the above-referenced consolidated purported stockholder class action. In March 2019, plaintiffs in one of these derivative suits moved to lift the stay and for an expedited trial. Briefs were filed on March 13, 2019, and the hearing was held on March 18, 2019. Defendants prevailed, with the Court denying the plaintiffs' request for an expedited trial and granting defendants' request to continue to stay this suit pending the outcome of the above-referenced consolidated purported stockholder class action. On May 4, 2020, the same plaintiffs again filed a motion requesting to lift the stay and for an expedited trial. Briefs were filed on May 13, 2020 and May 15, 2020 and a hearing was held on May 19, 2020. Defendants again prevailed, with the Court denying plaintiffs' request to lift the stay and for an expedited trial. The plaintiffs also sought leave to file an amended complaint, which was granted. The Court entered an order implementing its ruling on May 21, 2020. The amended complaint asserts additional allegations of breach of fiduciary duty related to two additional Twitter posts by Mr. Musk, dated July 29, 2019 and May 1, 2020, and seeks unspecified damages and declaratory and injunctive relief. We believe that the claims have no merit and intend to defend against them vigorously. We are unable to estimate the potential loss or range of loss, if any, associated with these lawsuits.

Certain Investigations and Other Matters

We receive requests for information from regulators and governmental authorities, such as the National Highway Traffic Safety Administration, the National Transportation Safety Board, the SEC, the Department of Justice ("DOJ") and various state, federal, and international agencies. We routinely cooperate with such regulatory and governmental requests.

In particular, the SEC had issued subpoenas to Tesla in connection with (a) Elon Musk's prior statement that he was considering taking Tesla private and (b) certain projections that we made for Model 3 production rates during 2017 and other public statements relating to Model 3 production. The take-private investigation was resolved and closed with a settlement entered into with the SEC in September 2018 and as further clarified in April 2019 in an amendment. On December 4, 2019, the SEC (i) closed the investigation into the projections and other public statements regarding Model 3 production rates and (ii) issued a subpoena seeking information concerning certain financial data and contracts including Tesla's regular financing arrangements. Separately, the DOJ had also asked us to voluntarily provide it with information about the above matters related to taking Tesla private and Model 3 production rates.

Aside from the settlement, as amended, with the SEC relating to Mr. Musk's statement that he was considering taking Tesla private, there have not been any developments in these matters that we deem to be material, and to our knowledge no government agency in any ongoing investigation has concluded that any wrongdoing occurred. As is our normal practice, we have been cooperating and will continue to cooperate with government authorities. We cannot predict the outcome or impact of any ongoing matters. Should the government decide to pursue an enforcement action, there exists the possibility of a material adverse impact on our business, results of operation, prospects, cash flows, and financial position.

We are also subject to various other legal proceedings and claims that arise from the normal course of business activities. If an unfavorable ruling or development were to occur, there exists the possibility of a material adverse impact on our business, results of operations, prospects, cash flows, financial position, and brand.

Indemnification and Guaranteed Returns

We are contractually obligated to compensate certain fund investors for any losses that they may suffer in certain limited circumstances resulting from reductions in investment tax credits claimed under U.S. federal laws for the installation of solar power facilities and energy storage systems that are charged from a co-sited solar power facility (“ITC”s). Generally, such obligations would arise as a result of reductions to the value of the underlying solar energy systems as assessed by the U.S. Internal Revenue Service (the “IRS”) for purposes of claiming ITCs. For each balance sheet date, we assess and recognize, when applicable, a distribution payable for the potential exposure from this obligation based on all the information available at that time, including any audits undertaken by the IRS. We believe that any payments to the fund investors in excess of the amounts already recognized by us for this obligation are not probable or material based on the facts known at the filing date.

The maximum potential future payments that we could have to make under this obligation would depend on the difference between the fair values of the solar energy systems sold or transferred to the funds as determined by us and the values that the IRS would determine as the fair value for the systems for purposes of claiming ITCs. We claim ITCs based on guidelines provided by the U.S. Treasury department and the statutory regulations from the IRS. We use fair values determined with the assistance of independent third-party appraisals commissioned by us as the basis for determining the ITCs that are passed-through to and claimed by the fund investors. Since we cannot determine exactly how the IRS will evaluate system values used in claiming ITCs, we are unable to reliably estimate the maximum potential future payments that it could have to make under this obligation as of each balance sheet date.

We are eligible to receive certain state and local incentives that are associated with renewable energy generation. The amount of incentives that can be claimed is based on the projected or actual solar energy system size and/or the amount of solar energy produced. We also currently participate in one state’s incentive program that is based on either the fair market value or the tax basis of solar energy systems placed in service. State and local incentives received are allocated between us and fund investors in accordance with the contractual provisions of each fund. We are not contractually obligated to indemnify any fund investor for any losses they may incur due to a shortfall in the amount of state or local incentives actually received.

Letters of Credit

As of December 31, 2020, we had \$233 million of unused letters of credit outstanding.

Note 17 – Variable Interest Entity Arrangements

We have entered into various arrangements with investors to facilitate the funding and monetization of our solar energy systems and vehicles. In particular, our wholly owned subsidiaries and fund investors have formed and contributed cash and assets into various financing funds and entered into related agreements. We have determined that the funds are variable interest entities (“VIEs”) and we are the primary beneficiary of these VIEs by reference to the power and benefits criterion under ASC 810, *Consolidation*. We have considered the provisions within the agreements, which grant us the power to manage and make decisions that affect the operation of these VIEs, including determining the solar energy systems or vehicles and the associated customer contracts to be sold or contributed to these VIEs, redeploying solar energy systems or vehicles and managing customer receivables. We consider that the rights granted to the fund investors under the agreements are more protective in nature rather than participating.

As the primary beneficiary of these VIEs, we consolidate in the financial statements the financial position, results of operations and cash flows of these VIEs, and all intercompany balances and transactions between us and these VIEs are eliminated in the consolidated financial statements. Cash distributions of income and other receipts by a fund, net of agreed upon expenses, estimated expenses, tax benefits and detriments of income and loss and tax credits, are allocated to the fund investor and our subsidiary as specified in the agreements.

Generally, our subsidiary has the option to acquire the fund investor’s interest in the fund for an amount based on the market value of the fund or the formula specified in the agreements.

Upon the sale or liquidation of a fund, distributions would occur in the order and priority specified in the agreements.

Pursuant to management services, maintenance and warranty arrangements, we have been contracted to provide services to the funds, such as operations and maintenance support, accounting, lease servicing and performance reporting. In some instances, we have guaranteed payments to the fund investors as specified in the agreements. A fund’s creditors have no recourse to our general credit or to that of other funds. None of the assets of the funds had been pledged as collateral for their obligations.

The aggregate carrying values of the VIEs' assets and liabilities, after elimination of any intercompany transactions and balances, in the consolidated balance sheets were as follows (in millions):

	December 31, 2020	December 31, 2019
Assets		
Current assets		
Cash and cash equivalents	\$ 87	\$ 106
Accounts receivable, net	28	27
Prepaid expenses and other current assets	105	100
Total current assets	220	233
Operating lease vehicles, net	—	1,183
Solar energy systems, net	4,749	5,030
Other non-current assets	182	156
Total assets	<u>\$ 5,151</u>	<u>\$ 6,602</u>
Liabilities		
Current liabilities		
Accrued liabilities and other	\$ 63	\$ 80
Deferred revenue	11	78
Customer deposits	14	9
Current portion of debt and finance leases	797	608
Total current liabilities	885	775
Deferred revenue, net of current portion	168	264
Debt and finance leases, net of current portion	1,346	1,516
Other long-term liabilities	19	22
Total liabilities	<u>\$ 2,418</u>	<u>\$ 2,577</u>

Note 18 – Lease Pass-Through Financing Obligation

Through December 31, 2020, we had entered into eight transactions referred to as “lease pass-through fund arrangements”. Under these arrangements, our wholly owned subsidiaries finance the cost of solar energy systems with investors through arrangements contractually structured as master leases for an initial term ranging between 10 and 25 years. These solar energy systems are subject to lease or PPAs with customers with an initial term not exceeding 25 years. These solar energy systems are included within solar energy systems, net on the consolidated balance sheets.

The cost of the solar energy systems under lease pass-through fund arrangements as of December 31, 2020 and 2019 was \$1.05 billion. The accumulated depreciation on these assets as of December 31, 2020 and 2019 was \$137 million and \$101 million, respectively. The total lease pass-through financing obligation as of December 31, 2020 was \$68 million, of which \$41 million is classified as a current liability. The total lease pass-through financing obligation as of December 31, 2019 was \$94 million, of which \$57 million was classified as a current liability. Lease pass-through financing obligation is included in accrued liabilities and other for the current portion and other long-term liabilities for the long-term portion on the consolidated balance sheets.

Under a lease pass-through fund arrangement, the investor makes a large upfront payment to the lessor, which is one of our subsidiaries, and in some cases, subsequent periodic payments. We allocate a portion of the aggregate investor payments to the fair value of the assigned ITCs, which is estimated by discounting the projected cash flow impact of the ITCs using a market interest rate and is accounted for separately. We account for the remainder of the investor payments as a borrowing by recording the proceeds received as a lease pass-through financing obligation, which is repaid from the future customer lease payments and any incentive rebates. A portion of the amounts received by the investor is allocated to interest expense using the effective interest rate method.

The lease pass-through financing obligation is non-recourse once the associated solar energy systems have been placed in-service and the associated customer arrangements have been assigned to the investors. In addition, we are responsible for any warranties, performance guarantees, accounting and performance reporting. Furthermore, we continue to account for the customer arrangements and any incentive rebates in the consolidated financial statements, regardless of whether the cash is received by us or directly by the investors.

As of December 31, 2020, the future minimum master lease payments to be received from investors, for each of the next five years and thereafter, were as follows (in millions):

2021	\$	41
2022		33
2023		26
2024		18
2025		27
Thereafter		423
Total	\$	<u>568</u>

For two of the lease pass-through fund arrangements, our subsidiaries have pledged its assets to the investors as security for its obligations under the contractual agreements.

Each lease pass-through fund arrangement has a one-time master lease prepayment adjustment mechanism that occurs when the capacity and the placed-in-service dates of the associated solar energy systems are finalized or on an agreed-upon date. As part of this mechanism, the master lease prepayment amount is updated, and we may be obligated to refund a portion of a master lease prepayment or entitled to receive an additional master lease prepayment. Any additional master lease prepayments are recorded as an additional lease pass-through financing obligation while any master lease prepayment refunds would reduce the lease pass-through financing obligation.

Note 19 – Defined Contribution Plan

We have a 401(k) savings plan that is intended to qualify as a deferred salary arrangement under Section 401(k) of the Internal Revenue Code. Under the 401(k) savings plan, participating employees may elect to contribute up to 100% of their eligible compensation, subject to certain limitations. Participants are fully vested in their contributions. We did not make any contributions to the 401(k) savings plan during the years ended December 31, 2020, 2019 and 2018 (other than employee deferrals of eligible compensation).

Note 20 – Related Party Transactions

In November 2018, our CEO purchased from us 284,575 shares of our common stock in a private placement at a per share price equal to the last closing price of our stock prior to the execution of the purchase agreement for an aggregate \$20 million, as adjusted to give effect to the Stock Split.

In May 2019, our CEO purchased from us 514,400 shares of our common stock in a public offering at the public offering price for an aggregate \$25 million, as adjusted to give effect to the Stock Split.

In February 2020, our CEO and a member of our Board of Directors purchased from us 65,185 and 6,250 shares, respectively, of our common stock in a public offering at the public offering price for an aggregate \$10 million and \$1 million, respectively, as adjusted to give effect to the Stock Split.

In June 2020, our CEO entered into an indemnification agreement with us for an interim term of 90 days. During the interim term, we resumed our annual evaluation of all available options for providing directors' and officers' indemnity coverage, which we had suspended during the height of shelter-in-place requirements related to the COVID-19 pandemic. As part of such process, we obtained a binding market quote for a directors' and officers' liability insurance policy with an aggregate coverage limit of \$100 million.

Pursuant to the indemnification agreement, our CEO provided, from his personal funds, directors' and officers' indemnity coverage to us during the interim term in the event such coverage is not indemnifiable by us, up to a total of \$100 million. In return, we paid our CEO a total of \$3 million, which represents the market-based premium for the market quote described above as prorated for 90 days and further discounted by 50%. Following the lapse of the 90-day period, we did not extend the term of the indemnification agreement with our CEO and instead bound a customary directors' and officers' liability insurance policy with third-party carriers.

Note 21 – Segment Reporting and Information about Geographic Areas

We have two operating and reportable segments: (i) automotive and (ii) energy generation and storage. The automotive segment includes the design, development, manufacturing, sales, and leasing of electric vehicles as well as sales of automotive regulatory credits. Additionally, the automotive segment is also comprised of services and other, which includes non-warranty after-sales vehicle services, sales of used vehicles, retail merchandise, sales by our acquired subsidiaries to third party customers, and vehicle insurance revenue. The energy generation and storage segment includes the design, manufacture, installation, sales, and leasing of solar energy generation and energy storage products and related services and sales of solar energy systems incentives. Our CODM does not evaluate operating segments using asset or liability information. The following table presents revenues and gross profit by reportable segment (in millions):

	Year Ended December 31,		
	2020	2019	2018
Automotive segment			
Revenues	\$ 29,542	\$ 23,047	\$ 19,906
Gross profit	\$ 6,612	\$ 3,879	\$ 3,852
Energy generation and storage segment			
Revenues	\$ 1,994	\$ 1,531	\$ 1,555
Gross profit	\$ 18	\$ 190	\$ 190

The following table presents revenues by geographic area based on the sales location of our products (in millions):

	Year Ended December 31,		
	2020	2019	2018
United States	\$ 15,207	\$ 12,653	\$ 14,872
China	6,662	2,979	1,757
Other	9,667	8,946	4,832
Total	<u>\$ 31,536</u>	<u>\$ 24,578</u>	<u>\$ 21,461</u>

The revenues in certain geographic areas were impacted by the price adjustments we made to our vehicle offerings during the years ended December 31, 2020 and 2019. Refer to Note 2, *Summary of Significant Accounting Policies*, for details.

The following table presents long-lived assets by geographic area (in millions):

	December 31,	December 31,
	2020	2019
United States	\$ 15,989	\$ 15,644
International	2,737	890
Total	<u>\$ 18,726</u>	<u>\$ 16,534</u>

Note 22 – Restructuring and Other

During the year ended December 31, 2019, we carried out certain restructuring actions in order to reduce costs and improve efficiency. As a result, we recognized \$50 million of costs primarily related to employee termination expenses and losses from closing certain stores impacting both segments. We recognized \$47 million in impairment related to the IPR&D intangible asset as we abandoned further development efforts and \$15 million for the related equipment within the energy generation and storage segment. We also incurred a loss of \$37 million for closing operations in certain facilities. On the statement of cash flows, the amounts were presented in the captions in which such amounts would have been recorded absent the impairment charges. The employee termination expenses were substantially paid by December 31, 2019, while the remaining amounts were non-cash.

During the year ended December 31, 2018, we carried-out certain restructuring actions in order to reduce costs and improve efficiency and recognized \$37 million of employee termination expenses and estimated losses from sub-leasing a certain facility. The employee termination cash expenses of \$27 million were substantially paid by the end of 2018, while the remaining amounts were non-cash. Also included within restructuring and other activities was \$55 million of expenses (materially all of which were non-cash) from restructuring the energy generation and storage segment, which comprised of disposals of certain tangible assets, the shortening of the useful life of a trade name intangible asset and a contract termination penalty. In addition, we concluded that a small portion of the IPR&D asset is not commercially feasible. Consequently, we recognized an impairment loss of \$13 million. We recognized settlement and legal expenses of \$30 million in the year ended December 31, 2018 for the settlement with the SEC relating to a take-private proposal for Tesla. These expenses were substantially paid by the end of 2018.

Note 23 – Subsequent Events*Early Conversions of Convertible Senior Notes*

Between January 1, 2021 and February 5, 2021, we have received additional conversion notices on our 2022 Notes and 2024 Notes for \$62 million and \$623 million in aggregate principal amounts, respectively, for which we intend to settle the principal amounts in cash during the three months ended March 31, 2021.

Investments

In January 2021, we updated our investment policy to provide us with more flexibility to further diversify and maximize returns on our cash that is not required to maintain adequate operating liquidity. As part of the policy, we may invest a portion of such cash in certain specified alternative reserve assets. Thereafter, we invested an aggregate \$1.50 billion in bitcoin under this policy. Moreover, we expect to begin accepting bitcoin as a form of payment for our products in the near future, subject to applicable laws and initially on a limited basis, which we may or may not liquidate upon receipt.

We will account for digital assets as indefinite-lived intangible assets in accordance with ASC 350, *Intangibles—Goodwill and Other*. The digital assets are initially recorded at cost and are subsequently remeasured on the consolidated balance sheet at cost, net of any impairment losses incurred since acquisition. We will perform an analysis each quarter to identify impairment. If the carrying value of the digital asset exceeds the fair value based on the lowest price quoted in the active exchanges during the period, we will recognize an impairment loss equal to the difference in the consolidated statement of operations.

The cost basis of the digital assets will not be adjusted upward for any subsequent increases in their quoted prices on the active exchanges. Gains (if any) will not be recorded until realized upon sale.

Note 24 – Quarterly Results of Operations (Unaudited)

The following table presents selected quarterly results of operations data for the years ended December 31, 2020 and 2019 (in millions, except per share amounts):

	Three Months Ended			
	March 31	June 30	September 30	December 31
2020				
Total revenues	\$ 5,985	\$ 6,036	\$ 8,771	\$ 10,744
Gross profit	\$ 1,234	\$ 1,267	\$ 2,063	\$ 2,066
Net income attributable to common stockholders	\$ 16	\$ 104	\$ 331	\$ 270
Net income per share of common stock attributable to common stockholders, basic (1)	\$ 0.02	\$ 0.11	\$ 0.32	\$ 0.28
Net income per share of common stock attributable to common stockholders, diluted (1)	\$ 0.02	\$ 0.10	\$ 0.27	\$ 0.24
2019				
Total revenues	\$ 4,541	\$ 6,350	\$ 6,303	\$ 7,384
Gross profit	\$ 566	\$ 921	\$ 1,191	\$ 1,391
Net (loss) income attributable to common stockholders	\$ (702)	\$ (408)	\$ 143	\$ 105
Net (loss) income per share of common stock attributable to common stockholders, basic (1)	\$ (0.82)	\$ (0.46)	\$ 0.16	\$ 0.12
Net (loss) income per share of common stock attributable to common stockholders, diluted (1)	\$ (0.82)	\$ (0.46)	\$ 0.16	\$ 0.11

(1) Prior period results have been adjusted to reflect the Stock Split. See Note 1, *Overview*, for details.

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*

Our management, with the participation of our Chief Executive Officer and our Chief Financial Officer, evaluated the effectiveness of our disclosure controls and procedures pursuant to Rule 13a-15 under the Securities Exchange Act of 1934, as amended (the “Exchange Act”). In designing and evaluating the disclosure controls and procedures, our management recognizes that any controls and procedures, no matter how well designed and operated, can provide only reasonable assurance of achieving the desired control objectives. In addition, the design of disclosure controls and procedures must reflect the fact that there are resource constraints and that our management is required to apply its judgment in evaluating the benefits of possible controls and procedures relative to their costs.

Based on this evaluation, our Chief Executive Officer and our Chief Financial Officer concluded that, as of December 31, 2020, our disclosure controls and procedures were designed at a reasonable assurance level and were effective to provide reasonable assurance that the information we are required to disclose in reports that we file or submit under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in the Securities and Exchange Commission rules and forms, and that such information is accumulated and communicated to our management, including our Chief Executive Officer and our Chief Financial Officer, as appropriate, to allow timely decisions regarding required disclosures.

Management’s Report on Internal Control over Financial Reporting

Our management is responsible for establishing and maintaining adequate internal control over financial reporting. Internal control over financial reporting is a process designed by, or under the supervision of, our Chief Executive Officer and Chief Financial Officer 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 and 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 our assets; (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 our receipts and expenditures are being made only in accordance with authorizations of our management and directors and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use or disposition of our assets that could have a material effect on the financial statements.

Under the supervision and with the participation of our management, including our Chief Executive Officer and Chief Financial Officer, we conducted an evaluation of the effectiveness of our internal control over financial reporting based on criteria established in *Internal Control – Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission (“COSO”). Our management concluded that our internal control over financial reporting was effective as of December 31, 2020.

Our independent registered public accounting firm, PricewaterhouseCoopers LLP, has audited the effectiveness of our internal control over financial reporting as of December 31, 2020, as stated in their report which is included herein.

Limitations on the Effectiveness of Controls

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

Changes in Internal Control over Financial Reporting

There was no change in our internal control over financial reporting that occurred during the fourth fiscal quarter of the year ended December 31, 2020, which has materially affected, or is reasonably likely to materially affect, our internal control over financial reporting.

ITEM 9B. OTHER INFORMATION

None.

PART III**ITEM 10. DIRECTORS, EXECUTIVE OFFICERS AND CORPORATE GOVERNANCE**

The information required by this Item 10 of Form 10-K will be included in our 2021 Proxy Statement to be filed with the Securities and Exchange Commission in connection with the solicitation of proxies for our 2021 Annual Meeting of Stockholders and is incorporated herein by reference. The 2021 Proxy Statement will be filed with the Securities and Exchange Commission within 120 days after the end of the fiscal year to which this report relates.

ITEM 11. EXECUTIVE COMPENSATION

The information required by this Item 11 of Form 10-K will be included in our 2021 Proxy Statement 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 of Form 10-K will be included in our 2021 Proxy Statement and is incorporated herein by reference.

ITEM 13. CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS AND DIRECTOR INDEPENDENCE

The information required by this Item 13 of Form 10-K will be included in our 2021 Proxy Statement and is incorporated herein by reference.

ITEM 14. PRINCIPAL ACCOUNTANT FEES AND SERVICES

The information required by this Item 14 of Form 10-K will be included in our 2021 Proxy Statement and is incorporated herein by reference.

PART IV**ITEM 15. EXHIBITS AND FINANCIAL STATEMENT SCHEDULES**

1. Financial statements (see *Index to Consolidated Financial Statements* in Part II, Item 8 of this report)
2. All financial statement schedules have been omitted since the required information was not applicable or was not present in amounts sufficient to require submission of the schedules, or because the information required is included in the consolidated financial statements or the accompanying notes
3. The exhibits listed in the following *Index to Exhibits* are filed or incorporated by reference as part of this report

INDEX TO EXHIBITS

Exhibit Number	Exhibit Description	Incorporated by Reference				Filed Herewith
		Form	File No.	Exhibit	Filing Date	
3.1	Amended and Restated Certificate of Incorporation of the Registrant.	10-K	001-34756	3.1	March 1, 2017	
3.2	Certificate of Amendment to the Amended and Restated Certificate of Incorporation of the Registrant.	10-K	001-34756	3.2	March 1, 2017	
3.3	Amended and Restated Bylaws of the Registrant.	8-K	001-34756	3.2	February 1, 2017	
4.1	Specimen common stock certificate of the Registrant.	10-K	001-34756	4.1	March 1, 2017	
4.2	Fifth Amended and Restated Investors' Rights Agreement, dated as of August 31, 2009, between Registrant and certain holders of the Registrant's capital stock named therein.	S-1	333-164593	4.2	January 29, 2010	
4.3	Amendment to Fifth Amended and Restated Investors' Rights Agreement, dated as of May 20, 2010, between Registrant and certain holders of the Registrant's capital stock named therein.	S-1/A	333-164593	4.2A	May 27, 2010	
4.4	Amendment to Fifth Amended and Restated Investors' Rights Agreement between Registrant, Toyota Motor Corporation and certain holders of the Registrant's capital stock named therein.	S-1/A	333-164593	4.2B	May 27, 2010	
4.5	Amendment to Fifth Amended and Restated Investor's Rights Agreement, dated as of June 14, 2010, between Registrant and certain holders of the Registrant's capital stock named therein.	S-1/A	333-164593	4.2C	June 15, 2010	
4.6	Amendment to Fifth Amended and Restated Investor's Rights Agreement, dated as of November 2, 2010, between Registrant and certain holders of the Registrant's capital stock named therein.	8-K	001-34756	4.1	November 4, 2010	
4.7	Waiver to Fifth Amended and Restated Investor's Rights Agreement, dated as of May 22, 2011, between Registrant and certain holders of the Registrant's capital stock named therein.	S-1/A	333-174466	4.2E	June 2, 2011	
4.8	Amendment to Fifth Amended and Restated Investor's Rights Agreement, dated as of May 30, 2011, between Registrant and certain holders of the Registrant's capital stock named therein.	8-K	001-34756	4.1	June 1, 2011	
4.9	Sixth Amendment to Fifth Amended and Restated Investors' Rights Agreement, dated as of May 15, 2013 among the Registrant, the Elon Musk Revocable Trust dated July 22, 2003 and certain other holders of the capital stock of the Registrant named therein.	8-K	001-34756	4.1	May 20, 2013	

Exhibit Number	Exhibit Description	Incorporated by Reference				Filed Herewith
		Form	File No.	Exhibit	Filing Date	
4.10	Waiver to Fifth Amended and Restated Investor's Rights Agreement, dated as of May 14, 2013, between the Registrant and certain holders of the capital stock of the Registrant named therein.	8-K	001-34756	4.2	May 20, 2013	
4.11	Waiver to Fifth Amended and Restated Investor's Rights Agreement, dated as of August 13, 2015, between the Registrant and certain holders of the capital stock of the Registrant named therein.	8-K	001-34756	4.1	August 19, 2015	
4.12	Waiver to Fifth Amended and Restated Investors' Rights Agreement, dated as of May 18, 2016, between the Registrant and certain holders of the capital stock of the Registrant named therein.	8-K	001-34756	4.1	May 24, 2016	
4.13	Waiver to Fifth Amended and Restated Investors' Rights Agreement, dated as of March 15, 2017, between the Registrant and certain holders of the capital stock of the Registrant named therein.	8-K	001-34756	4.1	March 17, 2017	
4.14	Waiver to Fifth Amended and Restated Investors' Rights Agreement, dated as of May 1, 2019, between the Registrant and certain holders of the capital stock of the Registrant named therein.	8-K	001-34756	4.1	May 3, 2019	
4.15	Indenture, dated as of May 22, 2013, by and between the Registrant and U.S. Bank National Association.	8-K	001-34756	4.1	May 22, 2013	
4.16	Third Supplemental Indenture, dated as of March 5, 2014, by and between the Registrant and U.S. Bank National Association.	8-K	001-34756	4.4	March 5, 2014	
4.17	Form of 1.25% Convertible Senior Note Due March 1, 2021 (included in Exhibit 4.16).	8-K	001-34756	4.4	March 5, 2014	
4.18	Fourth Supplemental Indenture, dated as of March 22, 2017, by and between the Registrant and U.S. Bank National Association.	8-K	001-34756	4.2	March 22, 2017	
4.19	Form of 2.375% Convertible Senior Note Due March 15, 2022 (included in Exhibit 4.18).	8-K	001-34756	4.2	March 22, 2017	
4.20	Fifth Supplemental Indenture, dated as of May 7, 2019, by and between Registrant and U.S. Bank National Association, related to 2.00% Convertible Senior Notes due May 15, 2024.	8-K	001-34756	4.2	May 8, 2019	
4.21	Form of 2.00% Convertible Senior Notes due May 15, 2024 (included in Exhibit 4.20).	8-K	001-34756	4.2	May 8, 2019	
4.22	Indenture, dated as of August 18, 2017, by and among the Registrant, SolarCity, and U.S. Bank National Association, as trustee.	8-K	001-34756	4.1	August 23, 2017	
4.23	Form of 5.30% Senior Note due August 15, 2025.	8-K	001-34756	4.2	August 23, 2017	

Exhibit Number	Exhibit Description	Incorporated by Reference				Filed Herewith
		Form	File No.	Exhibit	Filing Date	
4.24	Indenture, dated as of October 15, 2014, between SolarCity and U.S. Bank National Association, as trustee.	S-3ASR(1)	333-199321	4.1	October 15, 2014	
4.25	Fourth Supplemental Indenture, dated as of October 15, 2014, by and between SolarCity and the Trustee, related to SolarCity's 4.00% Solar Bonds, Series 2014/4-7.	8-K(1)	001-35758	4.5	October 15, 2014	
4.26	Eighth Supplemental Indenture, dated as of January 29, 2015, by and between SolarCity and the Trustee, related to SolarCity's 4.00% Solar Bonds, Series 2015/4-7.	8-K(1)	001-35758	4.5	January 29, 2015	
4.27	Tenth Supplemental Indenture, dated as of March 9, 2015, by and between SolarCity and the Trustee, related to SolarCity's 5.00% Solar Bonds, Series 2015/6-10.	8-K(1)	001-35758	4.3	March 9, 2015	
4.28	Eleventh Supplemental Indenture, dated as of March 9, 2015, by and between SolarCity and the Trustee, related to SolarCity's 5.75% Solar Bonds, Series 2015/7-15.	8-K(1)	001-35758	4.4	March 9, 2015	
4.29	Fifteenth Supplemental Indenture, dated as of March 19, 2015, by and between SolarCity and the Trustee, related to SolarCity's 4.70% Solar Bonds, Series 2015/C4-10.	8-K(1)	001-35758	4.5	March 19, 2015	
4.30	Sixteenth Supplemental Indenture, dated as of March 19, 2015, by and between SolarCity and the Trustee, related to SolarCity's 5.45% Solar Bonds, Series 2015/C5-15.	8-K(1)	001-35758	4.6	March 19, 2015	
4.31	Twentieth Supplemental Indenture, dated as of March 26, 2015, by and between SolarCity and the Trustee, related to SolarCity's 4.70% Solar Bonds, Series 2015/C9-10.	8-K(1)	001-35758	4.5	March 26, 2015	
4.32	Twenty-First Supplemental Indenture, dated as of March 26, 2015, by and between SolarCity and the Trustee, related to SolarCity's 5.45% Solar Bonds, Series 2015/C10-15.	8-K(1)	001-35758	4.6	March 26, 2015	
4.33	Twenty-Sixth Supplemental Indenture, dated as of April 2, 2015, by and between SolarCity and the Trustee, related to SolarCity's 4.70% Solar Bonds, Series 2015/C14-10.	8-K(1)	001-35758	4.5	April 2, 2015	
4.34	Thirtieth Supplemental Indenture, dated as of April 9, 2015, by and between SolarCity and the Trustee, related to SolarCity's 4.70% Solar Bonds, Series 2015/C19-10.	8-K(1)	001-35758	4.5	April 9, 2015	
4.35	Thirty-First Supplemental Indenture, dated as of April 9, 2015, by and between SolarCity and the Trustee, related to SolarCity's 5.45% Solar Bonds, Series 2015/C20-15.	8-K(1)	001-35758	4.6	April 9, 2015	
4.36	Thirty-Fifth Supplemental Indenture, dated as of April 14, 2015, by and between SolarCity and the Trustee, related to SolarCity's 4.70% Solar Bonds, Series 2015/C24-10.	8-K(1)	001-35758	4.5	April 14, 2015	

Exhibit Number	Exhibit Description	Incorporated by Reference				Filed Herewith
		Form	File No.	Exhibit	Filing Date	
4.37	Thirty-Sixth Supplemental Indenture, dated as of April 14, 2015, by and between SolarCity and the Trustee, related to SolarCity's 5.45% Solar Bonds, Series 2015/C25-15.	8-K(1)	001-35758	4.6	April 14, 2015	
4.38	Thirty-Eighth Supplemental Indenture, dated as of April 21, 2015, by and between SolarCity and the Trustee, related to SolarCity's 4.70% Solar Bonds, Series 2015/C27-10.	8-K(1)	001-35758	4.3	April 21, 2015	
4.39	Thirty-Ninth Supplemental Indenture, dated as of April 21, 2015, by and between SolarCity and the Trustee, related to SolarCity's 5.45% Solar Bonds, Series 2015/C28-15.	8-K(1)	001-35758	4.4	April 21, 2015	
4.40	Forty-Third Supplemental Indenture, dated as of April 27, 2015, by and between SolarCity and the Trustee, related to SolarCity's 4.70% Solar Bonds, Series 2015/C32-10.	8-K(1)	001-35758	4.5	April 27, 2015	
4.41	Forty-Fourth Supplemental Indenture, dated as of April 27, 2015, by and between SolarCity and the Trustee, related to SolarCity's 5.45% Solar Bonds, Series 2015/C33-15.	8-K(1)	001-35758	4.6	April 27, 2015	
4.42	Forty-Eighth Supplemental Indenture, dated as of May 1, 2015, by and between SolarCity and the Trustee, related to SolarCity's 5.00% Solar Bonds, Series 2015/12-10.	8-K(1)	001-35758	4.5	May 1, 2015	
4.43	Forty-Ninth Supplemental Indenture, dated as of May 1, 2015, by and between SolarCity and the Trustee, related to SolarCity's 5.75% Solar Bonds, Series 2015/13-15.	8-K(1)	001-35758	4.6	May 1, 2015	
4.44	Fifty-Second Supplemental Indenture, dated as of May 11, 2015, by and between SolarCity and the Trustee, related to SolarCity's 4.70% Solar Bonds, Series 2015/C36-10.	8-K(1)	001-35758	4.4	May 11, 2015	
4.45	Fifty-Third Supplemental Indenture, dated as of May 11, 2015, by and between SolarCity and the Trustee, related to SolarCity's 5.45% Solar Bonds, Series 2015/C37-15.	8-K(1)	001-35758	4.5	May 11, 2015	
4.46	Fifty-Seventh Supplemental Indenture, dated as of May 18, 2015, by and between SolarCity and the Trustee, related to SolarCity's 4.70% Solar Bonds, Series 2015/C40-10.	8-K(1)	001-35758	4.4	May 18, 2015	
4.47	Fifty-Eighth Supplemental Indenture, dated as of May 18, 2015, by and between SolarCity and the Trustee, related to SolarCity's 5.45% Solar Bonds, Series 2015/C41-15.	8-K(1)	001-35758	4.5	May 18, 2015	
4.48	Sixty-First Supplemental Indenture, dated as of May 26, 2015, by and between SolarCity and the Trustee, related to SolarCity's 4.70% Solar Bonds, Series 2015/C44-10.	8-K(1)	001-35758	4.4	May 26, 2015	
4.49	Sixty-Second Supplemental Indenture, dated as of May 26, 2015, by and between SolarCity and the Trustee, related to SolarCity's 5.45% Solar Bonds, Series 2015/C45-15.	8-K(1)	001-35758	4.5	May 26, 2015	

Exhibit Number	Exhibit Description	Incorporated by Reference				Filed Herewith
		Form	File No.	Exhibit	Filing Date	
4.50	Seventieth Supplemental Indenture, dated as of June 16, 2015, by and between SolarCity and the Trustee, related to SolarCity's 4.70% Solar Bonds, Series 2015/C52-10.	8-K(1)	001-35758	4.4	June 16, 2015	
4.51	Seventy-First Supplemental Indenture, dated as of June 16, 2015, by and between SolarCity and the Trustee, related to SolarCity's 5.45% Solar Bonds, Series 2015/C53-15.	8-K(1)	001-35758	4.5	June 16, 2015	
4.52	Seventy-Fourth Supplemental Indenture, dated as of June 22, 2015, by and between SolarCity and the Trustee, related to SolarCity's 4.70% Solar Bonds, Series 2015/C56-10.	8-K(1)	001-35758	4.4	June 23, 2015	
4.53	Seventy-Fifth Supplemental Indenture, dated as of June 22, 2015, by and between SolarCity and the Trustee, related to SolarCity's 5.45% Solar Bonds, Series 2015/C57-15.	8-K(1)	001-35758	4.5	June 23, 2015	
4.54	Eightieth Supplemental Indenture, dated as of June 29, 2015, by and between SolarCity and the Trustee, related to SolarCity's 4.70% Solar Bonds, Series 2015/C61-10.	8-K(1)	001-35758	4.5	June 29, 2015	
4.55	Eighty-First Supplemental Indenture, dated as of June 29, 2015, by and between SolarCity and the Trustee, related to SolarCity's 5.45% Solar Bonds, Series 2015/C62-15.	8-K(1)	001-35758	4.6	June 29, 2015	
4.56	Ninetieth Supplemental Indenture, dated as of July 20, 2015, by and between SolarCity and the Trustee, related to SolarCity's 4.70% Solar Bonds, Series 2015/C71-10.	8-K(1)	001-35758	4.5	July 21, 2015	
4.57	Ninety-First Supplemental Indenture, dated as of July 20, 2015, by and between SolarCity and the Trustee, related to SolarCity's 5.45% Solar Bonds, Series 2015/C72-15.	8-K(1)	001-35758	4.6	July 21, 2015	
4.58	Ninety-Fifth Supplemental Indenture, dated as of July 31, 2015, by and between SolarCity and the Trustee, related to SolarCity's 5.00% Solar Bonds, Series 2015/20-10.	8-K(1)	001-35758	4.5	July 31, 2015	
4.59	Ninety-Sixth Supplemental Indenture, dated as of July 31, 2015, by and between SolarCity and the Trustee, related to SolarCity's 5.75% Solar Bonds, Series 2015/21-15.	8-K(1)	001-35758	4.6	July 31, 2015	
4.60	One Hundred-and-Fifth Supplemental Indenture, dated as of August 10, 2015, by and between SolarCity and the Trustee, related to SolarCity's 4.70% Solar Bonds, Series 2015/C81-10.	8-K(1)	001-35758	4.5	August 10, 2015	
4.61	One Hundred-and-Eleventh Supplemental Indenture, dated as of August 17, 2015, by and between SolarCity and the Trustee, related to SolarCity's 5.45% Solar Bonds, Series 2015/C87-15.	8-K(1)	001-35758	4.6	August 17, 2015	

Exhibit Number	Exhibit Description	Incorporated by Reference				Filed Herewith
		Form	File No.	Exhibit	Filing Date	
4.62	One Hundred-and-Sixteenth Supplemental Indenture, dated as of August 24, 2015, by and between SolarCity and the Trustee, related to SolarCity's 5.45% Solar Bonds, Series 2015/C92-15.	8-K(1)	001-35758	4.6	August 24, 2015	
4.63	One Hundred-and-Twenty-First Supplemental Indenture, dated as of August 31, 2015, by and between SolarCity and the Trustee, related to SolarCity's 5.45% Solar Bonds, Series 2015/C97-15.	8-K(1)	001-35758	4.6	August 31, 2015	
4.64	One Hundred-and-Twenty-Eighth Supplemental Indenture, dated as of September 14, 2015, by and between SolarCity and the Trustee, related to SolarCity's 4.70% Solar Bonds, Series 2015/C101-10.	8-K(1)	001-35758	4.5	September 15, 2015	
4.65	One Hundred-and-Twenty-Ninth Supplemental Indenture, dated as of September 14, 2015, by and between SolarCity and the Trustee, related to SolarCity's 5.45% Solar Bonds, Series 2015/C102-15.	8-K(1)	001-35758	4.6	September 15, 2015	
4.66	One Hundred-and-Thirty-Third Supplemental Indenture, dated as of September 28, 2015, by and between SolarCity and the Trustee, related to SolarCity's 4.70% Solar Bonds, Series 2015/C106-10.	8-K(1)	001-35758	4.5	September 29, 2015	
4.67	One Hundred-and-Thirty-Fourth Supplemental Indenture, dated as of September 28, 2015, by and between SolarCity and the Trustee, related to SolarCity's 5.45% Solar Bonds, Series 2015/C107-15.	8-K(1)	001-35758	4.6	September 29, 2015	
4.68	One Hundred-and-Thirty-Eighth Supplemental Indenture, dated as of October 13, 2015, by and between SolarCity and the Trustee, related to SolarCity's 4.70% Solar Bonds, Series 2015/C111-10.	8-K(1)	001-35758	4.5	October 13, 2015	
4.69	One Hundred-and-Forty-Third Supplemental Indenture, dated as of October 30, 2015, by and between SolarCity and the Trustee, related to SolarCity's 5.00% Solar Bonds, Series 2015/25-10.	8-K(1)	001-35758	4.5	October 30, 2015	
4.70	One Hundred-and-Forty-Fourth Supplemental Indenture, dated as of October 30, 2015, by and between SolarCity and the Trustee, related to SolarCity's 5.75% Solar Bonds, Series 2015/26-15.	8-K(1)	001-35758	4.6	October 30, 2015	
4.71	One Hundred-and-Forty-Eighth Supplemental Indenture, dated as of November 4, 2015, by and between SolarCity and the Trustee, related to SolarCity's 4.70% Solar Bonds, Series 2015/C116-10.	8-K(1)	001-35758	4.5	November 4, 2015	
4.72	One Hundred-and-Fifty-Third Supplemental Indenture, dated as of November 16, 2015, by and between SolarCity and the Trustee, related to SolarCity's 4.70% Solar Bonds, Series 2015/C121-10.	8-K(1)	001-35758	4.5	November 17, 2015	

Exhibit Number	Exhibit Description	Incorporated by Reference				Filed Herewith
		Form	File No.	Exhibit	Filing Date	
4.73	One Hundred-and-Fifty-Fourth Supplemental Indenture, dated as of November 16, 2015, by and between SolarCity and the Trustee, related to SolarCity's 5.45% Solar Bonds, Series 2015/C122-15.	8-K(1)	001-35758	4.6	November 17, 2015	
4.74	One Hundred-and-Fifty-Eighth Supplemental Indenture, dated as of November 30, 2015, by and between SolarCity and the Trustee, related to SolarCity's 4.70% Solar Bonds, Series 2015/C126-10.	8-K(1)	001-35758	4.5	November 30, 2015	
4.75	One Hundred-and-Fifty-Ninth Supplemental Indenture, dated as of November 30, 2015, by and between SolarCity and the Trustee, related to SolarCity's 5.45% Solar Bonds, Series 2015/C127-15.	8-K(1)	001-35758	4.6	November 30, 2015	
4.76	One Hundred-and-Sixty-Third Supplemental Indenture, dated as of December 14, 2015, by and between SolarCity and the Trustee, related to SolarCity's 4.70% Solar Bonds, Series 2015/C131-10.	8-K(1)	001-35758	4.5	December 14, 2015	
4.77	One Hundred-and-Sixty-Fourth Supplemental Indenture, dated as of December 14, 2015, by and between SolarCity and the Trustee, related to SolarCity's 5.45% Solar Bonds, Series 2015/C132-15.	8-K(1)	001-35758	4.6	December 14, 2015	
4.78	One Hundred-and-Sixty-Seventh Supplemental Indenture, dated as of December 28, 2015, by and between SolarCity and the Trustee, related to SolarCity's 3.60% Solar Bonds, Series 2015/C135-5.	8-K(1)	001-35758	4.4	December 28, 2015	
4.79	One Hundred-and-Sixty-Eighth Supplemental Indenture, dated as of December 28, 2015, by and between SolarCity and the Trustee, related to SolarCity's 4.70% Solar Bonds, Series 2015/C136-10.	8-K(1)	001-35758	4.5	December 28, 2015	
4.80	One Hundred-and-Sixty-Ninth Supplemental Indenture, dated as of December 28, 2015, by and between SolarCity and the Trustee, related to SolarCity's 5.45% Solar Bonds, Series 2015/C137-15.	8-K(1)	001-35758	4.6	December 28, 2015	
4.81	One Hundred-and-Seventy-Second Supplemental Indenture, dated as of January 29, 2016, by and between SolarCity and the Trustee, related to SolarCity's 4.00% Solar Bonds, Series 2016/3-5.	8-K(1)	001-35758	4.4	January 29, 2016	
4.82	One Hundred-and-Seventy-Third Supplemental Indenture, dated as of January 29, 2016, by and between SolarCity and the Trustee, related to SolarCity's 5.00% Solar Bonds, Series 2016/4-10.	8-K(1)	001-35758	4.5	January 29, 2016	

Exhibit Number	Exhibit Description	Incorporated by Reference				Filed Herewith
		Form	File No.	Exhibit	Filing Date	
4.83	One Hundred-and-Seventy-Fourth Supplemental Indenture, dated as of January 29, 2016, by and between SolarCity and the Trustee, related to SolarCity's 5.75% Solar Bonds, Series 2016/5-15.	8-K(1)	001-35758	4.6	January 29, 2016	
4.84	One Hundred-and-Seventy-Seventh Supplemental Indenture, dated as of February 26, 2016, by and between SolarCity and the Trustee, related to SolarCity's 5.25% Solar Bonds, Series 2016/8-5.	8-K(1)	001-35758	4.4	February 26, 2016	
4.85	One Hundred-and-Seventy-Ninth Supplemental Indenture, dated as of March 21, 2016, by and between SolarCity and the Trustee, related to SolarCity's 5.25% Solar Bonds, Series 2016/10-5.	8-K(1)	001-35758	4.3	March 21, 2016	
4.86	One Hundred-and-Eighty-First Supplemental Indenture, dated as of June 10, 2016, by and between SolarCity and the Trustee, related to SolarCity's 5.25% Solar Bonds, Series 2016/12-5.	8-K(1)	001-35758	4.3	June 10, 2016	
4.87	Description of Registrant's Securities	10-K	001-34756	4.119	February 13, 2020	
10.1**	Form of Indemnification Agreement between the Registrant and its directors and officers.	S-1/A	333-164593	10.1	June 15, 2010	
10.2**	2003 Equity Incentive Plan.	S-1/A	333-164593	10.2	May 27, 2010	
10.3**	Form of Stock Option Agreement under 2003 Equity Incentive Plan.	S-1	333-164593	10.3	January 29, 2010	
10.4**	Amended and Restated 2010 Equity Incentive Plan.	10-K	001-34756	10.4	February 23, 2018	
10.5**	Form of Stock Option Agreement under 2010 Equity Incentive Plan.	10-K	001-34756	10.6	March 1, 2017	
10.6**	Form of Restricted Stock Unit Award Agreement under 2010 Equity Incentive Plan.	10-K	001-34756	10.7	March 1, 2017	
10.7**	Amended and Restated 2010 Employee Stock Purchase Plan, effective as of February 1, 2017.	10-K	001-34756	10.8	March 1, 2017	
10.8**	2019 Equity Incentive Plan.	S-8	333-232079	4.2	June 12, 2019	
10.9**	Form of Stock Option Agreement under 2019 Equity Incentive Plan.	S-8	333-232079	4.3	June 12, 2019	
10.10**	Form of Restricted Stock Unit Award Agreement under 2019 Equity Incentive Plan.	S-8	333-232079	4.4	June 12, 2019	
10.11**	Employee Stock Purchase Plan, effective as of June 12, 2019.	S-8	333-232079	4.5	June 12, 2019	
10.12**	2007 SolarCity Stock Plan and form of agreements used thereunder.	S-1(1)	333-184317	10.2	October 5, 2012	
10.13**	2012 SolarCity Equity Incentive Plan and form of agreements used thereunder.	S-1(1)	333-184317	10.3	October 5, 2012	
10.14**	2010 Zep Solar, Inc. Equity Incentive Plan and form of agreements used thereunder.	S-8(1)	333-192996	4.5	December 20, 2013	
10.15**	Offer Letter between the Registrant and Elon Musk dated October 13, 2008.	S-1	333-164593	10.9	January 29, 2010	

Exhibit Number	Exhibit Description	Incorporated by Reference				Filed Herewith
		Form	File No.	Exhibit	Filing Date	
10.16**	Performance Stock Option Agreement between the Registrant and Elon Musk dated January 21, 2018.	DEF 14A	001-34756	Appendix A	February 8, 2018	
10.17**	Maxwell Technologies, Inc. 2005 Omnibus Equity Incentive Plan, as amended through May 6, 2010	8-K(2)	001-15477	10.1	May 10, 2010	
10.18**	Maxwell Technologies, Inc. 2013 Omnibus Equity Incentive Plan	DEF 14A(2)	001-15477	Appendix A	June 2, 2017	
10.19	Indemnification Agreement, effective as of June 23, 2020, between Registrant and Elon R. Musk.	10-Q	001-34756	10.4	July 28, 2020	
10.20	Indemnification Agreement, dated as of February 27, 2014, by and between the Registrant and J.P. Morgan Securities LLC.	8-K	001-34756	10.1	March 5, 2014	
10.21	Form of Call Option Confirmation relating to 1.25% Convertible Senior Notes Due March 1, 2021.	8-K	001-34756	10.3	March 5, 2014	
10.22	Form of Warrant Confirmation relating to 1.25% Convertible Senior Notes Due March 1, 2021.	8-K	001-34756	10.5	March 5, 2014	
10.23	Form of Call Option Confirmation relating to 2.375% Convertible Notes due March 15, 2022.	8-K	001-34756	10.1	March 22, 2017	
10.24	Form of Warrant Confirmation relating to 2.375% Convertible Notes due March 15, 2022.	8-K	001-34756	10.2	March 22, 2017	
10.25	Form of Call Option Confirmation relating to 2.00% Convertible Senior Notes due May 15, 2024.	8-K	001-34756	10.1	May 3, 2019	
10.26	Form of Warrant Confirmation relating to 2.00% Convertible Senior Notes due May 15, 2024.	8-K	001-34756	10.2	May 3, 2019	
10.27†	Supply Agreement between Panasonic Corporation and the Registrant dated October 5, 2011.	10-K	001-34756	10.50	February 27, 2012	
10.28†	Amendment No. 1 to Supply Agreement between Panasonic Corporation and the Registrant dated October 29, 2013.	10-K	001-34756	10.35A	February 26, 2014	
10.29	Agreement between Panasonic Corporation and the Registrant dated July 31, 2014.	10-Q	001-34756	10.1	November 7, 2014	
10.30†	General Terms and Conditions between Panasonic Corporation and the Registrant dated October 1, 2014.	8-K	001-34756	10.2	October 11, 2016	
10.31	Letter Agreement, dated as of February 24, 2015, regarding addition of co-party to General Terms and Conditions, Production Pricing Agreement and Investment Letter Agreement between Panasonic Corporation and the Registrant.	10-K	001-34756	10.25A	February 24, 2016	

Exhibit Number	Exhibit Description	Incorporated by Reference				Filed Herewith
		Form	File No.	Exhibit	Filing Date	
10.32†	Amendment to Gigafactory General Terms, dated March 1, 2016, by and among the Registrant, Panasonic Corporation and Panasonic Energy Corporation of North America.	8-K	001-34756	10.1	October 11, 2016	
10.33††	Amended and Restated General Terms and Conditions for Gigafactory, entered into on June 10, 2020, by and among Registrant, Tesla Motors Netherlands B.V., Panasonic Corporation and Panasonic Corporation of North America.	10-Q	001-34756	10.2	July 28, 2020	
10.34†	Production Pricing Agreement between Panasonic Corporation and the Registrant dated October 1, 2014.	10-Q	001-34756	10.3	November 7, 2014	
10.35†	Investment Letter Agreement between Panasonic Corporation and the Registrant dated October 1, 2014.	10-Q	001-34756	10.4	November 7, 2014	
10.36	Amendment to Gigafactory Documents, dated April 5, 2016, by and among the Registrant, Panasonic Corporation, Panasonic Corporation of North America and Panasonic Energy Corporation of North America.	10-Q	001-34756	10.2	May 10, 2016	
10.37††	2019 Pricing Agreement (Japan Cells) with respect to 2011 Supply Agreement, executed September 20, 2019, by and among the Registrant, Tesla Motors Netherlands B.V., Panasonic Corporation and SANYO Electric Co., Ltd.	10-Q	001-34756	10.6	October 29, 2019	
10.38††	2020 Pricing Agreement (Gigafactory 2170 Cells), entered into on June 9, 2020, by and among Registrant, Tesla Motors Netherlands B.V., Panasonic Corporation and Panasonic Corporation of North America.	10-Q	001-34756	10.3	July 28, 2020	
10.39††	2021 Pricing Agreement (Japan Cells) with respect to 2011 Supply Agreement, executed December 29, 2020, by and among the Registrant, Tesla Motors Netherlands B.V., Panasonic Corporation of North America and SANYO Electric Co., Ltd.	—	—	—	—	X
10.40††	Amended and Restated Factory Lease, executed as of March 26, 2019, by and between the Registrant and Panasonic Energy North America, a division of Panasonic Corporation of North America, as tenant.	10-Q	001-34756	10.3	July 29, 2019	
10.41††	Lease Amendment, executed September 20, 2019, by and among the Registrant, Panasonic Corporation of North America, on behalf of its division Panasonic Energy of North America, with respect to the Amended and Restated Factory Lease, executed as of March 26, 2019.	10-Q	001-34756	10.7	October 29, 2019	
10.42††	Second Lease Amendment, entered into on June 9, 2020, by and between the Registrant and Panasonic Energy of North America, a division of Panasonic Corporation of North America, with respect to the Amended and Restated Factory Lease dated January 1, 2017.	10-Q	001-34756	10.1	July 28, 2020	

Exhibit Number	Exhibit Description	Incorporated by Reference				Filed Herewith
		Form	File No.	Exhibit	Filing Date	
10.43	Amendment and Restatement in respect of ABL Credit Agreement, dated as of March 6, 2019, by and among certain of the Registrant's and Tesla Motors Netherlands B.V.'s direct or indirect subsidiaries from time to time party thereto, as borrowers, Wells Fargo Bank, National Association, as documentation agent, JPMorgan Chase Bank, N.A., Goldman Sachs Bank USA, Morgan Stanley Senior Funding Inc. and Bank of America, N.A., as syndication agents, the lenders from time to time party thereto, and Deutsche Bank AG New York Branch, as administrative agent and collateral agent.	S-4/A	333-229749	10.68	April 3, 2019	
10.44	First Amendment to Amended and Restated ABL Credit Agreement, dated as of December 23, 2020, in respect of the Amended and Restated ABL Credit Agreement, dated as of March 6, 2019, by and among certain of the Registrant's and Tesla Motors Netherlands B.V.'s direct or indirect subsidiaries from time to time party thereto, as borrowers, Wells Fargo Bank, National Association, as documentation agent, JPMorgan Chase Bank, N.A., Goldman Sachs Bank USA, Morgan Stanley Senior Funding Inc. and Bank of America, N.A., as syndication agents, the lenders from time to time party thereto, and Deutsche Bank AG New York Branch, as administrative agent and collateral agent.	—	—	—	—	X
10.45†	Agreement for Tax Abatement and Incentives, dated as of May 7, 2015, by and between Tesla Motors, Inc. and the State of Nevada, acting by and through the Nevada Governor's Office of Economic Development.	10-Q	001-34756	10.1	August 7, 2015	
10.46††	Second Amended and Restated Loan and Security Agreement, dated as of August 28, 2020, by and among Tesla 2014 Warehouse SPV LLC, Tesla Finance LLC, the Lenders and Group Agents from time to time party thereto, Deutsche Bank Trust Company Americas, as Paying Agent, and Deutsche Bank AG, New York Branch, as Administrative Agent.	10-Q	001-34756	10.2	October 26, 2020	
10.47†	Loan and Security Agreement, executed on December 28, 2018, by and among LML 2018 Warehouse SPV, LLC, Tesla Finance LLC, the Lenders and Group Agents from time to time party thereto, Deutsche Bank Trust Company Americas, as Paying Agent, and Deutsche Bank AG, New York Branch, as Administrative Agent.	10-K	001-34756	10.55	February 19, 2019	

Exhibit Number	Exhibit Description	Incorporated by Reference				Filed Herewith
		Form	File No.	Exhibit	Filing Date	
10.48††	Letter of Consent, dated as of June 14, 2019, by and among LML 2018 Warehouse SPV, LLC, Deutsche Bank AG, New York Branch, as Administrative Agent, and the Group Agents party thereto, in respect of the Loan and Security Agreement, dated as of August 17, 2017 and as amended from time to time, by and among LML Warehouse SPV, LLC, Tesla Finance LLC, and the Lenders, Group Agents and Administrative Agent from time to time party thereto.	10-Q	001-34756	10.1	July 29, 2019	
10.49††	Amendment No. 1 to Loan and Security Agreement, dated as of August 16, 2019, by and among LML 2018 Warehouse SPV, LLC, Deutsche Bank Trust Company Americas, as Paying Agent, and Deutsche Bank AG, New York Branch, as Administrative Agent, and the Lenders and Group Agents from time to time party thereto.	10-Q	001-34756	10.2	October 29, 2019	
10.50	Amendment No. 2 to Loan and Security Agreement, dated as of December 13, 2019, by and among LML 2018 Warehouse SPV, LLC, Deutsche Bank Trust Company Americas, as Paying Agent, and Deutsche Bank AG, New York Branch, as Administrative Agent, and the Lenders and Group Agents from time to time party thereto.	10-K	001-34756	10.69	February 13, 2020	
10.51	Letter of Consent, dated February 18, 2020, by and among LML 2018 Warehouse SPV, LLC, Tesla 2014 Warehouse SPV LLC, LLC and Deutsche Bank AG, New York Branch, as Administrative Agent and as Group Agent under the 2018 Loan Agreement and the 2014 Loan Agreement, and the Group Agents party thereto, in respect of (i) the Loan and Security Agreement, dated December 27, 2018 and as amended from time to time, among LML 2018 Warehouse SPV, LLC, Tesla Finance LLC, Deutsche Bank Trust Company Americans, as Paying Agent, Deutsche Bank AG, New York Branch, as Administrative Agent, the lenders parties and agent parties thereto, and (ii) the Amended and Restated Loan and Security Agreement, dated August 17, 2017 and as amended from time to time, among Tesla 2014 Warehouse SPV LLC, Tesla Finance LLC, the lenders and group agents party thereto, Deutsche Bank Trust Company Americas, as Paying Agent, and Deutsche Bank AG, New York Branch, as Administrative Agent.	10-Q	001-34756	10.1	April 30, 2020	

Exhibit Number	Exhibit Description	Incorporated by Reference				Filed Herewith
		Form	File No.	Exhibit	Filing Date	
10.52††	Letter of Consent, dated as of August 14, 2020, by and among LML 2018 Warehouse SPV, LLC, Tesla 2014 Warehouse SPV LLC, Deutsche Bank AG, New York Branch, as Administrative Agent and Group Agent, and the Group Agents party thereto, in respect of (i) the Loan and Security Agreement, dated as of December 27, 2018 and as amended from time to time, by and among LML 2018 Warehouse SPV, LLC, Tesla Finance LLC, and the Lenders, Group Agents, Paying Agent and Administrative Agent from time to time party thereto, and (ii) the Amended and Restated Loan and Security Agreement, dated as of August 17, 2017 and as amended from time to time, by and among LML Warehouse SPV, LLC, Tesla Finance LLC, and the Lenders, Group Agents and Administrative Agent from time to time party thereto.	10-Q	001-34756	10.1	October 26, 2020	
10.53	Payoff and Termination Letter, executed on August 28, 2020, by and among LML 2018 Warehouse SPV, LLC, the Lenders and Group Agents from time to time party thereto, Deutsche Bank Trust Company Americas, as Paying Agent and Deutsche Bank AG, New York Branch, as Administrative Agent, relating to Loan and Security Agreement.	10-Q	001-34756	10.3	October 26, 2020	
10.54	Purchase Agreement, dated as of August 11, 2017, by and among the Registrant, SolarCity and Goldman Sachs & Co. LLC and Morgan Stanley & Co. LLC as representatives of the several initial purchasers named therein.	8-K	001-34756	10.1	August 23, 2017	
10.55	Amended and Restated Agreement For Research & Development Alliance on Triex Module Technology, effective as of September 2, 2014, by and between The Research Foundation For The State University of New York, on behalf of the College of Nanoscale Science and Engineering of the State University of New York, and Silevo, Inc.	10-Q(1)	001-35758	10.16	November 6, 2014	
10.56	First Amendment to Amended and Restated Agreement For Research & Development Alliance on Triex Module Technology, effective as of October 31, 2014, by and between The Research Foundation For The State University of New York, on behalf of the College of Nanoscale Science and Engineering of the State University of New York, and Silevo, Inc.	10-K(1)	001-35758	10.16a	February 24, 2015	

Exhibit Number	Exhibit Description	Incorporated by Reference				Filed Herewith
		Form	File No.	Exhibit	Filing Date	
10.57	<u>Second Amendment to Amended and Restated Agreement For Research & Development Alliance on Triex Module Technology, effective as of December 15, 2014, by and between The Research Foundation For The State University of New York, on behalf of the College of Nanoscale Science and Engineering of the State University of New York, and Silevo, Inc.</u>	10-K(1)	001-35758	10.16b	February 24, 2015	
10.58	<u>Third Amendment to Amended and Restated Agreement For Research & Development Alliance on Triex Module Technology, effective as of February 12, 2015, by and between The Research Foundation For The State University of New York, on behalf of the College of Nanoscale Science and Engineering of the State University of New York, and Silevo, Inc.</u>	10-Q(1)	001-35758	10.16c	May 6, 2015	
10.59	<u>Fourth Amendment to Amended and Restated Agreement For Research & Development Alliance on Triex Module Technology, effective as of March 30, 2015, by and between The Research Foundation For The State University of New York, on behalf of the College of Nanoscale Science and Engineering of the State University of New York, and Silevo, Inc.</u>	10-Q(1)	001-35758	10.16d	May 6, 2015	
10.60	<u>Fifth Amendment to Amended and Restated Agreement For Research & Development Alliance on Triex Module Technology, effective as of June 30, 2015, by and between The Research Foundation For The State University of New York, on behalf of the College of Nanoscale Science and Engineering of the State University of New York, and Silevo, LLC.</u>	10-Q(1)	001-35758	10.16e	July 30, 2015	
10.61	<u>Sixth Amendment to Amended and Restated Agreement For Research & Development Alliance on Triex Module Technology, effective as of September 1, 2015, by and between The Research Foundation For The State University of New York, on behalf of the College of Nanoscale Science and Engineering of the State University of New York, and Silevo, LLC.</u>	10-Q(1)	001-35758	10.16f	October 30, 2015	
10.62	<u>Seventh Amendment to Amended and Restated Agreement For Research & Development Alliance on Triex Module Technology, effective as of October 9, 2015, by and between The Research Foundation For The State University of New York, on behalf of the College of Nanoscale Science and Engineering of the State University of New York, and Silevo, LLC.</u>	10-Q(1)	001-35758	10.16g	October 30, 2015	

Exhibit Number	Exhibit Description	Incorporated by Reference				Filed Herewith
		Form	File No.	Exhibit	Filing Date	
10.63	<u>Eighth Amendment to Amended and Restated Agreement For Research & Development Alliance on Triex Module Technology, effective as of October 26, 2015, by and between The Research Foundation For The State University of New York, on behalf of the College of Nanoscale Science and Engineering of the State University of New York, and Silevo, LLC.</u>	10-Q(1)	001-35758	10.16h	October 30, 2015	
10.64	<u>Ninth Amendment to Amended and Restated Agreement For Research & Development Alliance on Triex Module Technology, effective as of December 9, 2015, by and between The Research Foundation For The State University of New York, on behalf of the College of Nanoscale Science and Engineering of the State University of New York, and Silevo, LLC.</u>	10-K(1)	001-35758	10.16i	February 10, 2016	
10.65	<u>Tenth Amendment to Amended and Restated Agreement For Research & Development Alliance on Triex Module Technology, effective as of March 31, 2017, by and between The Research Foundation For The State University of New York, on behalf of the Colleges of Nanoscale Science and Engineering of the State University of New York, and Silevo, LLC.</u>	10-Q	001-34756	10.8	May 10, 2017	
10.66	<u>Eleventh Amendment to Amended and Restated Agreement for Research & Development Alliance on Triex Module Technology, effective as of July 22, 2020, among the Research Foundation for the State University of New York, Silevo, LLC and Tesla Energy Operations, Inc.</u>	10-Q	001-34756	10.6	July 28, 2020	
10.67††	<u>Grant Contract for State-Owned Construction Land Use Right, dated as of October 17, 2018, by and between Shanghai Planning and Land Resource Administration Bureau, as grantor, and Tesla (Shanghai) Co., Ltd., as grantee (English translation).</u>	10-Q	001-34756	10.2	July 29, 2019	
10.68††	<u>Facility Agreement, dated as of September 26, 2019, by and between China Merchants Bank Co., Ltd. Beijing Branch and Tesla Automobile (Beijing) Co., Ltd. (English translation).</u>	10-Q	001-34756	10.3	October 29, 2019	
10.69††	<u>Statement Letter to China Merchants Bank Co., Ltd. Beijing Branch from Tesla Automobile (Beijing) Co., Ltd., dated as of September 26, 2019 (English translation).</u>	10-Q	001-34756	10.4	October 29, 2019	

Exhibit Number	Exhibit Description	Incorporated by Reference				Filed Herewith
		Form	File No.	Exhibit	Filing Date	
10.70††	Fixed Asset Syndication Loan Agreement, dated as of December 18, 2019, by and among Tesla (Shanghai) Co., Ltd., China Construction Bank Corporation, China (Shanghai) Pilot Free Trade Zone Special Area Branch, Agricultural Bank of China Shanghai Changning Sub-branch, Shanghai Pudong Development Bank Co., Ltd., Shanghai Branch, and Industrial and Commercial Bank of China Limited, China (Shanghai) Pilot Free Trade Zone Special Area Branch (English translation).	10-K	001-34756	10.85	February 13, 2020	
10.71††	Fixed Asset Syndication Loan Agreement and Supplemental Agreement, dated as of December 18, 2019, by and among Tesla (Shanghai) Co., Ltd., China Construction Bank Corporation, China (Shanghai) Pilot Free Trade Zone Special Area Branch, Agricultural Bank of China Shanghai Changning Sub-branch, Shanghai Pudong Development Bank Co., Ltd., Shanghai Branch, and Industrial and Commercial Bank of China Limited, China (Shanghai) Pilot Free Trade Zone Special Area Branch (English translation).	10-K	001-34756	10.86	February 13, 2020	
10.72††	Syndication Revolving Loan Agreement, dated as of December 18, 2019, by and among Tesla (Shanghai) Co., Ltd. China Construction Bank Corporation, China (Shanghai) Pilot Free Trade Zone Special Area Branch, Agricultural Bank of China Shanghai Changning Sub-branch, Shanghai Pudong Development Bank Co., Ltd., Shanghai Branch, and Industrial and Commercial Bank of China Limited, China (Shanghai) Pilot Free Trade Zone Special Area Branch (English translation).	10-K	001-34756	10.87	February 13, 2020	
10.73††	Working Capital Loan Contact, dated as of May 7, 2020, between Industrial and Commercial Bank of China, China (Shanghai) Pilot Free Trade Zone Lingang Special Area Branch and Tesla (Shanghai) Co., Ltd.	10-Q	001-34756	10.5	July 28, 2020	
21.1	List of Subsidiaries of the Registrant	—	—	—	—	X
23.1	Consent of PricewaterhouseCoopers LLP, Independent Registered Public Accounting Firm	—	—	—	—	X
31.1	Rule 13a-14(a) / 15(d)-14(a) Certification of Principal Executive Officer	—	—	—	—	X
31.2	Rule 13a-14(a) / 15(d)-14(a) Certification of Principal Financial Officer	—	—	—	—	X
32.1*	Section 1350 Certifications	—	—	—	—	X
101.INS	Inline XBRL Instance Document	—	—	—	—	X
101.SCH	Inline XBRL Taxonomy Extension Schema Document	—	—	—	—	X

Exhibit Number	Exhibit Description	Incorporated by Reference				Filed Herewith
		Form	File No.	Exhibit	Filing Date	
101.CAL	Inline XBRL Taxonomy Extension Calculation Linkbase Document.	—	—	—	—	X
101.DEF	Inline XBRL Taxonomy Extension Definition Linkbase Document	—	—	—	—	X
101.LAB	Inline XBRL Taxonomy Extension Label Linkbase Document	—	—	—	—	X
101.PRE	Inline XBRL Taxonomy Extension Presentation Linkbase Document	—	—	—	—	X
104	Cover Page Interactive Data File (formatted as inline XBRL with applicable taxonomy extension information contained in Exhibits 101)					

* Furnished herewith

** Indicates a management contract or compensatory plan or arrangement

† Confidential treatment has been requested for portions of this exhibit

†† Portions of this exhibit have been redacted in compliance with Regulation S-K Item 601(b)(10).

(1) Indicates a filing of SolarCity

(2) Indicates a filing of Maxwell Technologies, Inc.

ITEM 16. SUMMARY

None

SIGNATURES

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

Tesla, Inc.

Date: February 8, 2021

/s/ Elon Musk

Elon Musk
Chief Executive Officer
(Principal Executive Officer)

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

<u>Signature</u>	<u>Title</u>	<u>Date</u>
/s/ Elon Musk Elon Musk	Chief Executive Officer and Director (Principal Executive Officer)	February 8, 2021
/s/ Zachary J. Kirkhorn Zachary J. Kirkhorn	Chief Financial Officer (Principal Financial Officer)	February 8, 2021
/s/ Vaibhav Taneja Vaibhav Taneja	Chief Accounting Officer (Principal Accounting Officer)	February 8, 2021
/s/ Robyn Denholm Robyn Denholm	Director	February 8, 2021
/s/ Ira Ehrenpreis Ira Ehrenpreis	Director	February 8, 2021
/s/ Lawrence J. Ellison Lawrence J. Ellison	Director	February 8, 2021
/s/ Antonio J. Gracias Antonio J. Gracias	Director	February 8, 2021
/s/ Hiromichi Mizuno Hiromichi Mizuno	Director	February 8, 2021
/s/ James Murdoch James Murdoch	Director	February 8, 2021
/s/ Kimbal Musk Kimbal Musk	Director	February 8, 2021
/s/ Kathleen Wilson-Thompson Kathleen Wilson-Thompson	Director	February 8, 2021