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 approximately $1.13 per share on June 28, 2010 as adjusted to give effect to the three-for-one stock split effected in the form of a stock dividend in August 2022 (the “2022 Stock Split”) and the five-for-one stock split effected in the form of a stock dividend in August 2020 (the “2020 Stock Split”).

Holders

As of January 22, 2024, there were 9,300 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.

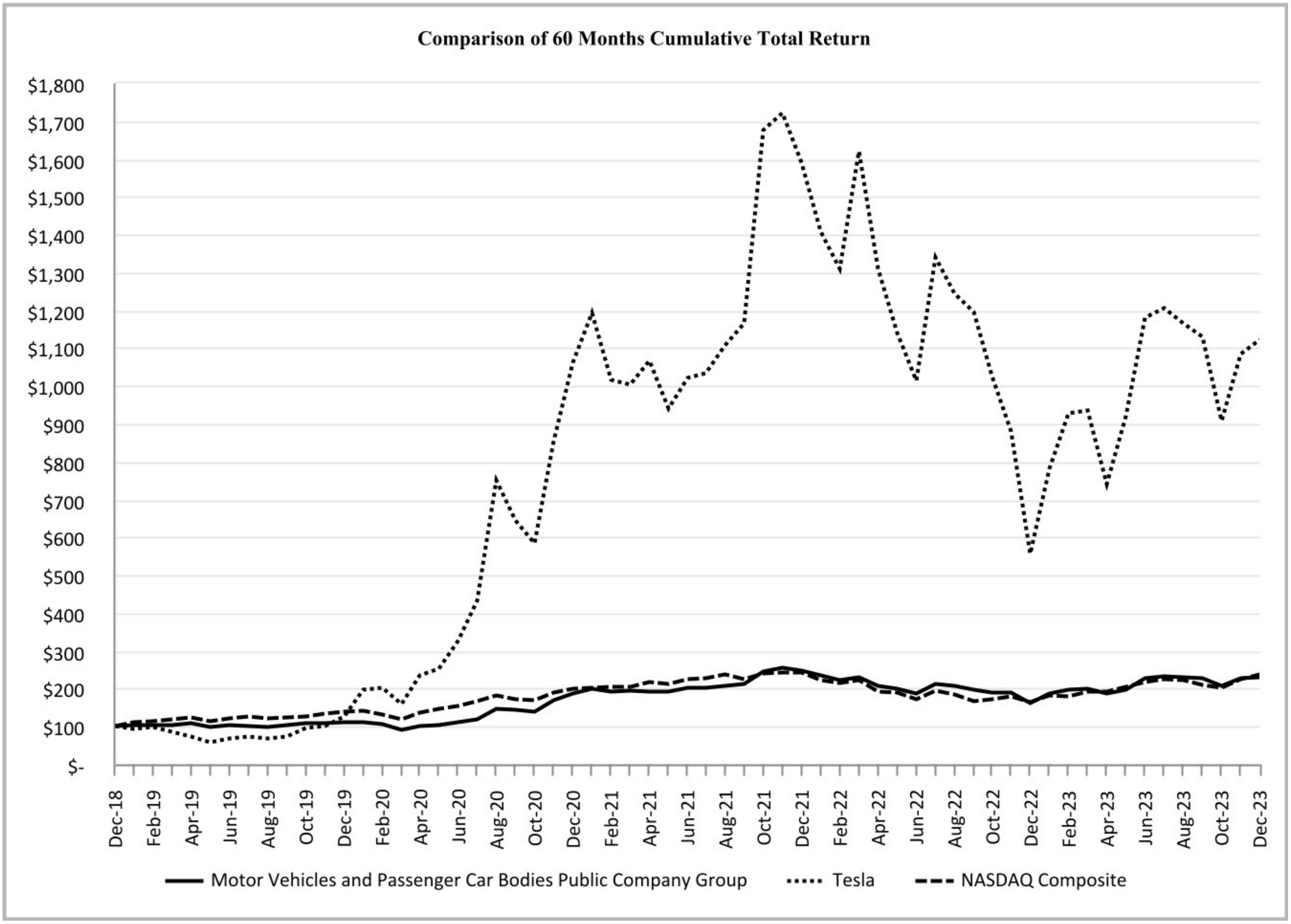
Dividend Policy

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, 2019 through December 31, 2023, 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, 2019 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. [RESERVED]

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 further discussion of our products and services, technology and competitive strengths, refer to Item 1-Business. For discussion related to changes in financial condition and the results of operations for fiscal year 2022-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 2022, which was filed with the Securities and Exchange Commission on January 31, 2023.

Overview and 2023 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, charging, insurance, financial and other services related to our products. Additionally, we are increasingly focused on products and services based on artificial intelligence, robotics and automation.

In 2023, we produced 1,845,985 consumer vehicles and delivered 1,808,581 consumer vehicles. We are currently focused on increasing vehicle production, capacity and delivery capabilities, reducing costs, improving and developing our vehicles and battery technologies, vertically integrating and localizing our supply chain, improving and further deploying our FSD capabilities, increasing the affordability and efficiency of our vehicles, bringing new products to market and expanding our global infrastructure, including our service and charging infrastructure.

In 2023, we deployed 14.72 GWh of energy storage products and 223 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 2023, we recognized total revenues of $96.77 billion, representing an increase of $15.31 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 invest in research and development to accelerate our AI, software and fleet-based profits for further revenue growth.

In 2023, our net income attributable to common stockholders was $15.00 billion, representing a favorable change of $2.44 billion, compared to the prior year. This included a one-time non-cash tax benefit of $5.93 billion for the release of valuation allowance on certain deferred tax assets. We continue to focus on further cost reductions and operational efficiencies while maximizing delivery volumes.

We ended 2023 with $29.09 billion in cash and cash equivalents and investments, representing an increase of $6.91 billion from the end of 2022. Our cash flows provided by operating activities in 2023 and 2022 were $13.26 billion and $14.72 billion, respectively, representing a decrease of $1.47 billion. Capital expenditures amounted to $8.90 billion in 2023, compared to $7.16 billion in 2022, representing an increase of $1.74 billion. Sustained growth has allowed our business to generally fund itself, and we will continue investing in a number of capital-intensive projects and research and development in upcoming periods.

Management Opportunities, Challenges and Uncertainties and 2024 Outlook

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 / Model X	Active
	Model 3 / Model Y	Active
Gigafactory Shanghai	Model 3 / Model Y	Active
Gigafactory Berlin-Brandenburg	Model Y	Active
Gigafactory Texas	Model Y	Active
	Cybertruck	Active
Gigafactory Nevada	Tesla Semi	Pilot production
Various	Next Generation Platform	In development
TBD	Tesla Roadster	In development

We are focused on growing our manufacturing capacity, which includes capacity for manufacturing new vehicle models such as our Cybertruck and next generation platform, and ramping all of our production vehicles to their installed production capacities as well as increasing production rate and efficiency at our current factories. The next phase of production growth will depend on the continued ramp at our factories and the introduction of our next generation platform, as well as our ability to add to our available sources of battery cell supply by manufacturing our own cells that we are developing to have high-volume output, lower capital and production costs and longer range. Our goals are to improve vehicle performance, decrease production costs and increase affordability and customer awareness.

These plans are subject to uncertainties inherent in establishing and ramping manufacturing operations, which may be exacerbated by new product and manufacturing technologies we introduce, the number of concurrent international projects, any industry-wide component constraints, labor shortages and any future impact from events outside of our control. For example, during the third quarter of 2023, we experienced a sequential decline in production volumes due to pre-planned shutdowns for upgrades at various factories. Moreover, we have set 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, Sales, Deliveries and Infrastructure

Our cost reduction efforts, cost innovation strategies, and additional localized procurement and manufacturing are key to our vehicles' affordability and have allowed us to competitively price our vehicles. We will also continue to generate demand and brand awareness by improving our vehicles' performance and functionality, including through products based on artificial intelligence such as Autopilot, FSD Capability, and other software features and delivering new vehicles, such as our Cybertruck. Moreover, we expect to continue to benefit from ongoing electrification of the automotive sector and increasing environmental regulations and initiatives.

However, we operate in a cyclical industry that is sensitive to political and regulatory uncertainty, including with respect to trade and the environment, all of which can be compounded by inflationary pressures, rising energy prices, interest rate fluctuations and the liquidity of enterprise customers. For example, inflationary pressures have increased across the markets in which we operate. In an effort to curb this trend, central banks in developed countries raised interest rates rapidly and substantially, impacting the affordability of vehicle lease and finance arrangements. Further, sales of vehicles in the automotive industry also tend to be cyclical in many markets, which may expose us to increased volatility as we expand and adjust our operations. Moreover, as additional competitors enter the marketplace and help bring the world closer to sustainable transportation, we will have to adjust and continue to execute well to maintain our momentum. Additionally, our suppliers' liquidity and allocation plans may be affected by current challenges in the North American automotive industry, which could reduce our access to components or result in unfavorable changes to cost. These macroeconomic and industry trends have had, and will likely continue to have, an impact on the pricing of, and order rate for our vehicles, and in turn our operating margin. Changes in government and economic incentives in relation to electric vehicles may also impact our sales. We will continue to adjust accordingly to such developments, and we believe our ongoing cost reduction, including improved production innovation and efficiency at our newest factories and lower logistics costs, and focus on operating leverage will continue to benefit us in relation to our competitors, while our new products will help enable future growth.

As our production increases, we must work constantly to similarly increase vehicle delivery capability so that it does not become a bottleneck on our total deliveries. We are also committed to reducing the percentage of vehicles delivered in the third month of each quarter, which will help to reduce the cost per vehicle. As we expand our manufacturing operations globally, we will also have to continue to increase and staff our delivery, servicing and charging infrastructure accordingly, maintain our vehicle reliability and optimize our Supercharger locations to ensure cost effectiveness and customer satisfaction. In particular, as other automotive manufacturers have announced their adoption of the North American Charging Standard (“NACS”) and agreements with us to utilize our Superchargers, we must correspondingly expand our network in order to ensure adequate availability to meet customer demands. We also remain focused on continued enhancements of 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, including the construction of a new Megafactory in Shanghai and the ongoing ramp at our Megafactory in Lathrop, California. For Megapack, energy storage deployments can vary meaningfully quarter to quarter depending on the timing of specific project milestones. We remain committed to growing our retrofit solar energy business by offering a low-cost and simplified online ordering experience. In addition, we continue to seek to improve our installation capabilities and price efficiencies for Solar Roof. As these product lines grow, we will have to maintain adequate battery cell supply for our energy storage products and ensure the availability of qualified 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 may further be impacted by uncertainties in future global market conditions. We are simultaneously ramping new products, building or ramping manufacturing facilities on three continents, piloting the development and manufacture of new battery cell technologies, expanding our Supercharger network and investing in autonomy and other artificial intelligence enabled training and products, 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, all other continuing infrastructure growth and varying levels of inflation, we currently expect our capital expenditures to exceed $10.00 billion in 2024 and be between $8.00 to $10.00 billion in each of the following two fiscal years.

Our business has 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 generally facilitating positive cash generation. We have and will continue to utilize such cash flows, among other things, to do more vertical integration, expand our product roadmap and provide financing options to our customers. At the same time, we are likely to see heightened levels of capital expenditures during certain periods depending on the specific pace of our capital-intensive projects and other potential variables such as rising material prices and increases in supply chain and labor expenses resulting from changes in global trade conditions and labor availability. Overall, we expect our ability to be self-funding to continue as long as macroeconomic factors support current trends in our sales.

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.

The estimates used for, but not limited to, determining significant economic incentive for resale value guarantee arrangements, sales return reserves, the collectability of accounts and financing receivables, inventory valuation, warranties, 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 Sales

Automotive sales revenue includes revenues related to cash and financing deliveries of new vehicles, and specific other features and services that meet the definition of a performance obligation under Accounting Standards Codification ("ASC") 606, *Revenue from Contracts with Customers* ("ASC 606"), including access to our FSD Capability features and their ongoing maintenance, internet connectivity, free Supercharging programs 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, except sales we finance for which payments are collected over the contractual loan term. We also recognize a sales return reserve based on historical experience plus consideration for expected future market values, when we offer resale value guarantees or similar buyback terms. Other features and services such as access to our internet connectivity, unlimited free Supercharging 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. Other limited free Supercharging incentives are recognized based on actual usage or expiration, whichever is earlier. We recognize revenue related to these other features and services over the performance period, which is generally the expected ownership life of the vehicle. Revenue related to FSD Capability features is recognized when functionality is delivered to the customer and their ongoing maintenance is recognized over time. 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.

Inventory Valuation

Inventories are stated at the lower of cost or net realizable value. Cost is computed using standard cost for vehicles and energy products, which approximates actual cost on a first-in, first-out basis. 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 write-downs 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 if 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 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. For liabilities that we are entitled to receive indemnification from our suppliers, we record receivables for the contractually obligated amounts on the consolidated balance sheets 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. 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, our accrued warranty balance is primarily related to our automotive segment.

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.

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 income 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 that are not more likely than not to be realized. We monitor the realizability of our deferred tax assets taking into account all relevant factors at each reporting period. In completing our assessment of realizability of our deferred tax assets, we consider our history of income (loss) measured at pre-tax income (loss) adjusted for permanent book-tax differences on a jurisdictional basis, volatility in actual earnings, excess tax benefits related to stock-based compensation in recent prior years, and impacts of the timing of reversal of existing temporary differences. We also rely on our assessment of the Company’s projected future results of business operations, including uncertainty in future operating results relative to historical results, volatility in the market price of our common stock and its performance over time, variable macroeconomic conditions impacting our ability to forecast future taxable income, and changes in business that may affect the existence and magnitude of future taxable income. Our valuation allowance assessment is based on our best estimate of future results considering all available information.

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 more likely than not 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.

Results of Operations

Revenues

	Year Ended December 31,			2023 vs. 2022 Change		2022 vs. 2021 Change	
(Dollars in millions)	2023	2022	2021	$	%	$	%
Automotive sales	$ 78,509	$ 67,210	$ 44,125	$ 11,299	17 %	$ 23,085	52 %
Automotive regulatory credits	1,790	1,776	1,465	14	1 %	311	21 %
Automotive leasing	2,120	2,476	1,642	(356)	(14)%	834	51 %
Total automotive revenues	82,419	71,462	47,232	10,957	15 %	24,230	51 %
Services and other	8,319	6,091	3,802	2,228	37 %	2,289	60 %
Total automotive & services and other segment revenue	90,738	77,553	51,034	13,185	17 %	26,519	52 %
Energy generation and storage segment revenue	6,035	3,909	2,789	2,126	54 %	1,120	40 %
Total revenues	$ 96,773	$ 81,462	$ 53,823	$ 15,311	19 %	$ 27,639	51 %

Automotive & Services and Other Segment

Automotive sales revenue includes revenues related to cash and financing deliveries of new Model S, Model X, Semi, Model 3, Model Y, and Cybertruck vehicles, including access to our FSD Capability features and their ongoing maintenance, internet connectivity, free Supercharging programs and over-the-air software updates. These deliveries are vehicles that are not subject to lease accounting.

Automotive regulatory credits includes sales of regulatory credits to other automotive manufacturers. Our revenue from automotive regulatory credits is directly related to our new vehicle production, sales and pricing negotiated with our customers. We monetize them proactively as new vehicles are sold based on standing arrangements with buyers of such credits, typically as close as possible to the production and delivery of the vehicle or changes in regulation impacting the credits.

Automotive leasing revenue includes the amortization of revenue for vehicles under direct operating lease agreements. 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.

Services and other revenue consists of sales of used vehicles, non-warranty after-sales vehicle services, body shop and parts, paid Supercharging, vehicle insurance revenue and retail merchandise.

2023 compared to 2022

Automotive sales revenue increased $11.30 billion, or 17%, in the year ended December 31, 2023 as compared to the year ended December 31, 2022, primarily due to an increase of 473,382 combined Model 3 and Model Y cash deliveries from production ramping of Model Y globally. The increase was partially offset by a lower average selling price on our vehicles driven by overall price reductions year over year, sales mix, and a negative impact from the United States dollar strengthening against other foreign currencies in the year ended December 31, 2023 compared to the prior year.

Automotive regulatory credits revenue increased $14 million, or 1%, in the year ended December 31, 2023 as compared to the year ended December 31, 2022.

Automotive leasing revenue decreased $356 million, or 14%, in the year ended December 31, 2023 as compared to the year ended December 31, 2022. The decrease was primarily due to a decrease in direct sales-type leasing revenue driven by lower deliveries year over year, partially offset by an increase from our growing direct operating lease portfolio.

Services and other revenue increased $2.23 billion, or 37%, in the year ended December 31, 2023 as compared to the year ended December 31, 2022. The increase was primarily due to higher used vehicle revenue driven by increases in volume, body shop and part sales revenue, non-warranty maintenance services revenue, paid Supercharging revenue and insurance services revenue, all of which are primarily attributable to our growing fleet. The increases were partially offset by a decrease in the average selling price of used vehicles.

Energy Generation and Storage Segment

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

2023 compared to 2022

Energy generation and storage revenue increased $2.13 billion, or 54%, in the year ended December 31, 2023 as compared to the year ended December 31, 2022. The increase was primarily due to an increase in deployments of Megapack.

Cost of Revenues and Gross Margin

	Year Ended December 31,			2023 vs. 2022 Change		2022 vs. 2021 Change	
(Dollars in millions)	2023	2022	2021	$	%	$	%
Cost of revenues							
Automotive sales	$ 65,121	$ 49,599	$ 32,415	$ 15,522	31 %	$ 17,184	53 %
Automotive leasing	1,268	1,509	978	(241)	(16)%	531	54 %
Total automotive cost of revenues	66,389	51,108	33,393	15,281	30 %	17,715	53 %
Services and other	7,830	5,880	3,906	1,950	33 %	1,974	51 %
Total automotive & services and other segment cost of revenues	74,219	56,988	37,299	17,231	30 %	19,689	53 %
Energy generation and storage segment	4,894	3,621	2,918	1,273	35 %	703	24 %
Total cost of revenues	$ 79,113	$ 60,609	$ 40,217	$ 18,504	31 %	$ 20,392	51 %
Gross profit total automotive	$ 16,030	$ 20,354	$ 13,839				
Gross margin total automotive	19.4 %	28.5 %	29.3 %				
Gross profit total automotive & services and other segment	$ 16,519	$ 20,565	$ 13,735				
Gross margin total automotive & services and other segment	18.2 %	26.5 %	26.9 %				
Gross profit energy generation and storage segment	$ 1,141	$ 288	$ (129)				
Gross margin energy generation and storage segment	18.9 %	7.4 %	(4.6)%				
Total gross profit	$ 17,660	$ 20,853	$ 13,606				
Total gross margin	18.2 %	25.6 %	25.3 %				

Automotive & Services and Other Segment

Cost of automotive sales revenue includes direct and indirect materials, labor costs, manufacturing overhead, including depreciation costs of tooling and machinery, shipping and logistic costs, vehicle connectivity costs, FSD ongoing maintenance 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. Additionally, cost of automotive sales revenue benefits from manufacturing credits earned.

Cost of automotive leasing revenue includes the depreciation of operating lease vehicles, cost of goods sold associated with direct sales-type leases and warranty expense related to leased vehicles.

Costs of services and other revenue includes cost of used vehicles including refurbishment costs, costs associated with providing non-warranty after-sales services, costs associated with our body shops and part sales, costs of paid Supercharging, costs to provide vehicle insurance and costs for retail merchandise.

2023 compared to 2022

Cost of automotive sales revenue increased $15.52 billion, or 31%, in the year ended December 31, 2023 as compared to the year ended December 31, 2022. Cost of automotive sales revenue increased in line with the change in deliveries year over year, as discussed above. The increase was partially offset by a decrease in the average combined cost per unit of our vehicles primarily due to sales mix, lower inbound freight, a decrease in material costs and lower manufacturing costs from better fixed cost absorption. Our costs of revenue were also positively impacted by the United States dollar strengthening against our foreign currencies as compared to the prior periods and by the IRA manufacturing credits earned during the current year.

Cost of automotive leasing revenue decreased $241 million, or 16%, in the year ended December 31, 2023 as compared to the year ended December 31, 2022. The decrease was primarily due to a decrease in direct sales-type leasing cost of revenue driven by lower deliveries year over year.

Cost of services and other revenue increased $1.95 billion, or 33%, in the year ended December 31, 2023 as compared to the year ended December 31, 2022. The increase was generally in line with the changes in services and other revenue as discussed above.

Gross margin for total automotive decreased from 28.5% to 19.4% in the year ended December 31, 2023 as compared to the year ended December 31, 2022. The decrease was primarily due to a lower average selling price on our vehicles partially offset by the favorable change in our average combined cost per unit of our vehicles and IRA manufacturing credits earned as discussed above.

Gross margin for total automotive & services and other segment decreased from 26.5% to 18.2% in the year ended December 31, 2023 as compared to the year ended December 31, 2022, primarily due to the automotive gross margin decrease discussed above.

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. Additionally, cost of energy generation and storage revenue benefits from manufacturing credits earned. In agreements for solar energy systems 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.

2023 compared to 2022

Cost of energy generation and storage revenue increased $1.27 billion, or 35%, in the year ended December 31, 2023 as compared to the year ended December 31, 2022, in line with the increase in Megapack deployments year over year, as discussed above. This increase was partially offset by an improvement in production ramping that drove down the average cost per MWh of Megapack as well as IRA manufacturing credits earned during the current year.

Gross margin for energy generation and storage increased from 7.4% to 18.9% in the year ended December 31, 2023 as compared to the year ended December 31, 2022. The increase was driven by an improvement in our Megapack gross margin from lower average cost per MWh and a higher proportion of Megapack, which operated at a higher gross margin, within the segment as compared to the prior year periods. Additionally, there was a margin benefit from IRA manufacturing credits earned.

Research and Development Expense

	Year Ended December 31,			2023 vs. 2022 Change		2022 vs. 2021 Change	
(Dollars in millions)	2023	2022	2021	$	%	$	%
Research and development	$ 3,969	$ 3,075	$ 2,593	$ 894	29 %	$ 482	19 %
As a percentage of revenues	4 %	4 %	5 %				

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 $894 million, or 29%, in the year ended December 31, 2023 as compared to the year ended December 31, 2022. The overall increase was primarily driven by additional costs in the current year related to the pre-production phase for Cybertruck, AI and other programs.

R&D expenses as a percentage of revenue stayed consistent at 4% in the year ended December 31, 2023 as compared to the year ended December 31, 2022. Our R&D expenses have increased proportionately with total revenues as we continue to expand our product roadmap and technologies.

Selling, General and Administrative Expense

	Year Ended December 31,			2023 vs. 2022 Change		2022 vs. 2021 Change	
(Dollars in millions)	2023	2022	2021	$	%	$	%
Selling, general and administrative	$ 4,800	$ 3,946	$ 4,517	$ 854	22 %	$ (571)	(13)%
As a percentage of revenues	5 %	5 %	8 %				

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 $854 million, or 22%, in the year ended December 31, 2023 as compared to the year ended December 31, 2022. This was driven by a $447 million increase in employee and labor costs primarily from increased headcount, including professional services and a $363 million increase in facilities related expenses.

Restructuring and Other

	Year Ended December 31,			2023 vs. 2022 Change		2022 vs. 2021 Change	
(Dollars in millions)	2023	2022	2021	$	%	$	%
Restructuring and other	$ —	$ 176	$ (27)	$ (176)	(100)%	$ 203	Not meaningful

During the year ended December 31, 2022, we recorded an impairment loss of $204 million as well as realized gains of $64 million in connection with converting our holdings of digital assets into fiat currency. We also recorded other expenses of $36 million during the second quarter of the year ended December 31, 2022, related to employee terminations.

Interest Income

	Year Ended December 31,			2023 vs. 2022 Change		2022 vs. 2021 Change	
(Dollars in millions)	2023	2022	2021	$	%	$	%
Interest income	$ 1,066	$ 297	$ 56	$ 769	259 %	$ 241	430 %

Interest income increased $769 million, or 259%, in the year ended December 31, 2023 as compared to the year ended December 31, 2022. This increase was primarily due to higher interest earned on our cash and cash equivalents and short-term investments in the year ended December 31, 2023 as compared to the prior year due to rising interest rates and our increasing portfolio balance.

Other Income (Expense), Net

	Year Ended December 31,			2023 vs. 2022 Change		2022 vs. 2021 Change	
(Dollars in millions)	2023	2022	2021	$	%	$	%
Other income (expense), net	$ 172	$ (43)	$ 135	$ 215	Not meaningful	$ (178)	Not meaningful

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

Other income, net, changed favorably by $215 million in the year ended December 31, 2023 as compared to the year ended December 31, 2022. The favorable change was primarily due to fluctuations in foreign currency exchange rates on our intercompany balances.

(Benefit from) Provision for Income Taxes

	Year Ended December 31,			2023 vs. 2022 Change		2022 vs. 2021 Change	
(Dollars in millions)	2023	2022	2021	$	%	$	%
(Benefit from) provision for income taxes	$ (5,001)	$ 1,132	$ 699	$ (6,133)	Not meaningful	$ 433	62 %
Effective tax rate	(50)%	8 %	11 %				

We monitor the realizability of our deferred tax assets taking into account all relevant factors at each reporting period. As of December 31, 2023, based on the relevant weight of positive and negative evidence, including the amount of our taxable income in recent years which is objective and verifiable, and consideration of our expected future taxable earnings, we concluded that it is more likely than not that our U.S. federal and certain state deferred tax assets are realizable. As such, we released $6.54 billion of our valuation allowance associated with the U.S. federal and state deferred tax assets, with the exception of our California deferred tax assets. Approximately $5.93 billion of the total valuation allowance release was related to deferred tax assets to be realized in the future years and the remainder benefited us during the year ended December 31, 2023. We continue to maintain a full valuation allowance against our California deferred tax assets as of December 31, 2023, because we concluded they are not more likely than not to be realized as we expect our California deferred tax assets generation in future years to exceed our ability to use these deferred tax assets.

Our (benefit from) provision for income taxes changed by $6.13 billion in the year ended December 31, 2023 as compared to the year ended December 31, 2022, primarily due to the release of $6.54 billion of our valuation allowance associated with the U.S. federal and certain state deferred tax assets.

Our effective tax rate changed from an expense of 8% to a benefit of 50% in the year ended December 31, 2023 as compared to the year ended December 31, 2022, primarily due to the release of the valuation allowance regarding our U.S. federal and certain state deferred tax assets.

See Note 14, *Income Taxes*, to the consolidated financial statements included elsewhere in this Annual Report on Form 10-K for further details.

Liquidity and Capital Resources

We expect to continue to generate net positive operating cash flow as we have done in the last five fiscal years. The cash we generate from our core operations enables us to fund ongoing operations and production, our research and development projects for new products and technologies including our proprietary battery cells, additional manufacturing ramps at existing manufacturing facilities, the construction of future factories, and the continued expansion of our retail and service locations, body shops, Mobile Service fleet, Supercharger, including to support NACS, energy product installation capabilities and autonomy and other artificial intelligence enabled products.

In addition, because a large portion of our future expenditures will be to fund our growth, we expect that if needed we will be able to adjust our capital and operating expenditures by operating segment. For example, if our near-term manufacturing operations decrease in scale or ramp more slowly than expected, including due to global economic or business conditions, we may choose to correspondingly slow the pace of our capital expenditures. Finally, we continually evaluate our cash needs and may decide it is best to raise additional capital or seek alternative financing sources to fund the rapid growth of our business, including through drawdowns on existing or new debt facilities or financing funds. Conversely, we may also from time to time determine that it is in our best interests to voluntarily repay certain indebtedness early.

Accordingly, we believe that our current sources of funds will provide us with adequate liquidity during the 12-month period following December 31, 2023, as well as in the long-term.

See the sections below for more details regarding the material requirements for cash in our business and our sources of liquidity to meet such needs.

Material Cash Requirements

From time to time in the ordinary course of business, we enter into agreements with vendors for the purchase of components and raw materials to be used in the manufacture of our products. However, due to contractual terms, variability in the precise growth curves of our development and production ramps, and opportunities to renegotiate pricing, we generally do not have binding and enforceable purchase orders under such contracts beyond the short-term, and the timing and magnitude of purchase orders beyond such period is difficult to accurately project.

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 Uncertainties and 2023 Outlook—Cash Flow and Capital Expenditure Trends in this Annual Report on Form 10-K, we currently expect our capital expenditures to support our projects globally to exceed $10.00 billion in 2024 and be between $8.00 to $10.00 billion in each of the following two fiscal years. In connection with our operations at Gigafactory New York, we have an agreement to spend or incur $5.00 billion in combined capital, operational expenses, costs of goods sold and other costs in the State of New York through December 31, 2029 (pursuant to a deferral of our required timelines to meet such obligations that was granted in April 2021, and which was memorialized in an amendment to our agreement with the SUNY Foundation in August 2021). For details regarding these obligations, refer to Note 15, *Commitments and Contingencies*, to the consolidated financial statements included elsewhere in this Annual Report on Form 10-K.

As of December 31, 2023, we and our subsidiaries had outstanding $4.68 billion in aggregate principal amount of indebtedness, of which $1.98 billion is scheduled to become due in the succeeding 12 months. As of December 31, 2023, our total minimum lease payments was $5.96 billion, of which $1.31 billion is due in the succeeding 12 months. For details regarding our indebtedness and lease obligations, refer to Note 11, *Debt*, and Note 12, *Leases*, to the consolidated financial statements included elsewhere in this Annual Report on Form 10-K.

Sources and Conditions of Liquidity

Our sources to fund our material cash requirements are predominantly from our deliveries and servicing of new and used vehicles, sales and installations of our energy storage products and solar energy systems, proceeds from debt facilities and proceeds from equity offerings, when applicable.

As of December 31, 2023, we had $16.40 billion and $12.70 billion of cash and cash equivalents and short-term investments, respectively. Balances held in foreign currencies had a U.S. dollar equivalent of $4.43 billion and consisted primarily of Chinese yuan and euros. We had $5.03 billion of unused committed credit amounts as of December 31, 2023. For details regarding our indebtedness, refer to Note 11, *Debt*, to the consolidated financial statements included elsewhere in this Annual Report on Form 10-K.

We continue adapting our strategy to meet our liquidity and risk objectives, such as investing in U.S. government securities and other investments, to do more vertical integration, expand our product roadmap and provide financing options to our customers.

Summary of Cash Flows

(Dollars in millions)	Year Ended December 31, 2023	2022	2021
Net cash provided by operating activities	$ 13,256	$ 14,724	$ 11,497
Net cash used in investing activities	$ (15,584)	$ (11,973)	$ (7,868)
Net cash provided by (used in) financing activities	$ 2,589	$ (3,527)	$ (5,203)

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. Our operating cash inflows include cash from vehicle sales and related servicing, customer lease and financing payments, customer deposits, cash from sales of regulatory credits and energy generation and storage products, and interest income on our cash and investments portfolio. 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 decreased by $1.47 billion to $13.26 billion during the year ended December 31, 2023 from $14.72 billion during the year ended December 31, 2022. This decrease was primarily due to the decrease in net income excluding non-cash expenses, gains and losses of $2.93 billion, partially offset by favorable changes in net operating assets and liabilities of $1.46 billion.

Cash Flows from Investing Activities

Cash flows from investing activities and their variability across each period related primarily to capital expenditures, which were $8.90 billion for the year ended December 31, 2023 and $7.16 billion for the year ended December 31, 2022, mainly for global factory expansion and machinery and equipment as we expand our product roadmap. We also purchased $6.62 billion and $5.81 billion of investments, net of proceeds from maturities and sales, for the year ended December 31, 2023 and 2022, respectively. Additionally, proceeds from sales of digital assets was $936 million in the year ended December 31, 2022.

Cash Flows from Financing Activities

Net cash from financing activities changed by $6.12 billion to $2.59 billion net cash provided by financing activities during the year ended December 31, 2023 from $3.53 billion net cash used in financing activities during the year ended December 31, 2022. The change was primarily due to a $3.93 billion increase in proceeds from issuances of debt and a $2.01 billion decrease in repayments of debt. See Note 11, *Debt*, to the consolidated financial statements included elsewhere in this Annual Report on Form 10-K for further details regarding our debt obligations.

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 and operating expenses denominated in currencies other than the U.S. dollar (primarily the Chinese yuan and euro 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 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 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).

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 before income taxes. These changes would have resulted in a gain or loss of $1.01 billion at December 31, 2023 and $473 million at December 31, 2022, assuming no foreign currency hedging.

ITEM 8. FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA

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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, 2023 and 2022, and the related consolidated statements of operations, of comprehensive income, of redeemable noncontrolling interests and equity and of cash flows for each of the three years in the period ended December 31, 2023, 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, 2023, 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, 2023 and 2022, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2023 in conformity with 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, 2023, 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 convertible debt in 2021.

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 matter communicated below is a matter arising from the current period audit of the consolidated financial statements that was communicated or required to be communicated to the audit committee and that (i) relates 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 matter below, providing a separate opinion on the critical audit matter or on the accounts or disclosures to which it relates.

Automotive Warranty Reserve

As described in Note 2 to the consolidated financial statements, total accrued warranty, which primarily relates to the automotive segment, was $5,152 million as of December 31, 2023. The Company provides a manufacturer’s warranty on all new and used Tesla vehicles. 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 and recalls if 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 automotive warranty reserve for certain Tesla vehicle models; this in turn led to significant auditor judgment, subjectivity, and effort in performing procedures to evaluate management’s significant assumptions related to the nature, frequency and costs of future claims for certain Tesla vehicle models, 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 for certain Tesla vehicle models, including controls over management’s significant assumptions related to 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, performing one of the following: (i) testing management’s process for determining the automotive warranty reserve for certain Tesla vehicle models or (ii) developing an independent estimate of the automotive warranty reserve for certain Tesla vehicle models and comparing the independent estimate to management’s estimate to evaluate the reasonableness of the estimate. Testing management’s process involved evaluating 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 by performing a lookback analysis comparing prior period forecasted claims to actual claims incurred. Developing the independent estimate involved testing the completeness and accuracy of historical vehicle claims processed and testing 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 developing an independent estimate of the automotive warranty reserve for certain Tesla vehicle models and in evaluating the appropriateness of certain aspects of management’s significant assumptions related to the nature and frequency of future claims.

/s/ PricewaterhouseCoopers LLP

San Jose, California
January 26, 2024

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

Tesla, Inc.

Consolidated Balance Sheets

(in millions, except per share data)

		December 31, 2023		December 31, 2022
Assets				
Current assets				
Cash and cash equivalents	$	16,398	$	16,253
Short-term investments		12,696		5,932
Accounts receivable, net		3,508		2,952
Inventory		13,626		12,839
Prepaid expenses and other current assets		3,388		2,941
Total current assets		49,616		40,917
Operating lease vehicles, net		5,989		5,035
Solar energy systems, net		5,229		5,489
Property, plant and equipment, net		29,725		23,548
Operating lease right-of-use assets		4,180		2,563
Digital assets, net		184		184
Intangible assets, net		178		215
Goodwill		253		194
Deferred tax assets		6,733		328
Other non-current assets		4,531		3,865
Total assets	$	106,618	$	82,338
Liabilities				
Current liabilities				
Accounts payable	$	14,431	$	15,255
Accrued liabilities and other		9,080		8,205
Deferred revenue		2,864		1,747
Current portion of debt and finance leases		2,373		1,502
Total current liabilities		28,748		26,709
Debt and finance leases, net of current portion		2,857		1,597
Deferred revenue, net of current portion		3,251		2,804
Other long-term liabilities		8,153		5,330
Total liabilities		43,009		36,440
Commitments and contingencies (Note 15)				
Redeemable noncontrolling interests in subsidiaries		242		409
Equity				
Stockholders' equity				
Preferred stock; $0.001 par value; 100 shares authorized; no shares issued and outstanding		—		—
Common stock; $0.001 par value; 6,000 shares authorized; 3,185 and 3,164 shares issued and outstanding as of December 31, 2023 and 2022, respectively		3		3
Additional paid-in capital		34,892		32,177
Accumulated other comprehensive loss		(143)		(361)
Retained earnings		27,882		12,885
Total stockholders' equity		62,634		44,704
Noncontrolling interests in subsidiaries		733		785
Total liabilities and equity	$	106,618	$	82,338

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,		
	2023	**2022**	**2021**
Revenues			
Automotive sales	$ 78,509	$ 67,210	$ 44,125
Automotive regulatory credits	1,790	1,776	1,465
Automotive leasing	2,120	2,476	1,642
Total automotive revenues	82,419	71,462	47,232
Energy generation and storage	6,035	3,909	2,789
Services and other	8,319	6,091	3,802
Total revenues	96,773	81,462	53,823
Cost of revenues			
Automotive sales	65,121	49,599	32,415
Automotive leasing	1,268	1,509	978
Total automotive cost of revenues	66,389	51,108	33,393
Energy generation and storage	4,894	3,621	2,918
Services and other	7,830	5,880	3,906
Total cost of revenues	79,113	60,609	40,217
Gross profit	17,660	20,853	13,606
Operating expenses			
Research and development	3,969	3,075	2,593
Selling, general and administrative	4,800	3,946	4,517
Restructuring and other	—	176	(27)
Total operating expenses	8,769	7,197	7,083
Income from operations	8,891	13,656	6,523
Interest income	1,066	297	56
Interest expense	(156)	(191)	(371)
Other income (expense), net	172	(43)	135
Income before income taxes	9,973	13,719	6,343
(Benefit from) provision for income taxes	(5,001)	1,132	699
Net income	14,974	12,587	5,644
Net (loss) income attributable to noncontrolling interests and redeemable noncontrolling interests in subsidiaries	(23)	31	125
Net income attributable to common stockholders	$ 14,997	$ 12,556	$ 5,519
Net income per share of common stock attributable to common stockholders			
Basic	$ 4.73	$ 4.02	$ 1.87
Diluted	$ 4.30	$ 3.62	$ 1.63
Weighted average shares used in computing net income per share of common stock			
Basic	3,174	3,130	2,959
Diluted	3,485	3,475	3,386

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

Tesla, Inc.

Consolidated Statements of Comprehensive Income
(in millions)

	Year Ended December 31,		
	2023	**2022**	**2021**
Net income	$ 14,974	$ 12,587	$ 5,644
Other comprehensive income (loss):			
Foreign currency translation adjustment	198	(392)	(308)
Unrealized net gain (loss) on investments	16	(23)	(1)
Adjustment for net loss realized and included in net income	4	—	—
Comprehensive income	15,192	12,172	5,335
Less: Comprehensive (loss) income attributable to noncontrolling interests and redeemable noncontrolling interests in subsidiaries	(23)	31	125
Comprehensive income attributable to common stockholders	$ 15,215	$ 12,141	$ 5,210

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

Tesla, Inc.

Consolidated Statements of Redeemable Noncontrolling Interests and Equity
(in millions)

	Redeemable Noncontrolling Interests	Common Stock		Additional Paid-In Capital	Accumulated Other Comprehensive Income (Loss)	(Accumulated Deficit) Retained Earnings	Total Stockholders' Equity	Noncontrolling Interests in Subsidiaries	Total Equity
		Shares	Amount						
Balance as of December 31, 2020	$ 604	2,879	$ 3	$ 27,260	$ 363	$ (5,401)	$ 22,225	$ 850	$ 23,075
Adjustments for prior periods from adopting ASU 2020-06	—	—	—	(474)	—	211	(263)	—	(263)
Exercises of conversion feature of convertible senior notes	—	2	—	6	—	—	6	—	6
Settlements of warrants	—	112	—	—	—	—	—	—	—
Issuance of common stock for equity incentive awards	—	107	—	707	—	—	707	—	707
Stock-based compensation	—	—	—	2,299	—	—	2,299	—	2,299
Contributions from noncontrolling interests	2	—	—	—	—	—	—	—	—
Distributions to noncontrolling interests	(66)	—	—	—	—	—	—	(106)	(106)
Buy-outs of noncontrolling interests	(15)	—	—	5	—	—	5	—	5
Net income	43	—	—	—	—	5,519	5,519	82	5,601
Other comprehensive loss	—	—	—	—	(309)	—	(309)	—	(309)
Balance as of December 31, 2021	$ 568	3,100	$ 3	$ 29,803	$ 54	$ 329	$ 30,189	$ 826	$ 31,015
Settlements of warrants	—	37	—	—	—	—	—	—	—
Issuance of common stock for equity incentive awards	—	27	—	541	—	—	541	—	541
Stock-based compensation	—	—	—	1,806	—	—	1,806	—	1,806
Distributions to noncontrolling interests	(46)	—	—	—	—	—	—	(113)	(113)
Buy-outs of noncontrolling interests	(11)	—	—	27	—	—	27	(61)	(34)
Net (loss) income	(102)	—	—	—	—	12,556	12,556	133	12,689
Other comprehensive loss	—	—	—	—	(415)	—	(415)	—	(415)
Balance as of December 31, 2022	$ 409	3,164	$ 3	$ 32,177	$ (361)	$ 12,885	$ 44,704	$ 785	$ 45,489
Issuance of common stock for equity incentive awards	—	21	—	700	—	—	700	—	700
Stock-based compensation	—	—	—	2,013	—	—	2,013	—	2,013
Distributions to noncontrolling interests	(32)	—	—	—	—	—	—	(108)	(108)
Buy-outs of noncontrolling interests	(39)	—	—	2	—	—	2	(17)	(15)
Net (loss) income	(96)	—	—	—	—	14,997	14,997	73	15,070
Other comprehensive income	—	—	—	—	218	—	218	—	218
Balance as of December 31, 2023	$ 242	3,185	$ 3	$ 34,892	$ (143)	$ 27,882	$ 62,634	$ 733	$ 63,367

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,		
	2023	**2022**	**2021**
Cash Flows from Operating Activities			
Net income	$ 14,974	$ 12,587	$ 5,644
Adjustments to reconcile net income to net cash provided by operating activities:			
Depreciation, amortization and impairment	4,667	3,747	2,911
Stock-based compensation	1,812	1,560	2,121
Inventory and purchase commitments write-downs	463	177	140
Foreign currency transaction net unrealized (gain) loss	(144)	81	(55)
Deferred income taxes	(6,349)	(196)	(149)
Non-cash interest and other operating activities	81	340	245
Digital assets loss (gain), net	—	140	(27)
Changes in operating assets and liabilities:			
Accounts receivable	(586)	(1,124)	(130)
Inventory	(1,195)	(6,465)	(1,709)
Operating lease vehicles	(1,952)	(1,570)	(2,114)
Prepaid expenses and other assets	(2,652)	(3,713)	(1,540)
Accounts payable, accrued and other liabilities	2,605	8,029	5,367
Deferred revenue	1,532	1,131	793
Net cash provided by operating activities	13,256	14,724	11,497
Cash Flows from Investing Activities			
Purchases of property and equipment excluding finance leases, net of sales	(8,898)	(7,158)	(6,482)
Purchases of solar energy systems, net of sales	(1)	(5)	(32)
Purchases of digital assets	—	—	(1,500)
Proceeds from sales of digital assets	—	936	272
Purchase of intangible assets	—	(9)	—
Purchases of investments	(19,112)	(5,835)	(132)
Proceeds from maturities of investments	12,353	22	—
Proceeds from sales of investments	138	—	—
Receipt of government grants	—	76	6
Business combinations, net of cash acquired	(64)	—	—
Net cash used in investing activities	(15,584)	(11,973)	(7,868)
Cash Flows from Financing Activities			
Proceeds from issuances of debt	3,931	—	8,883
Repayments of debt	(1,351)	(3,364)	(14,167)
Collateralized lease repayments	—	—	(9)
Proceeds from exercises of stock options and other stock issuances	700	541	707
Principal payments on finance leases	(464)	(502)	(439)
Debt issuance costs	(29)	—	(9)
Proceeds from investments by noncontrolling interests in subsidiaries	—	—	2
Distributions paid to noncontrolling interests in subsidiaries	(144)	(157)	(161)
Payments for buy-outs of noncontrolling interests in subsidiaries	(54)	(45)	(10)
Net cash provided by (used in) financing activities	2,589	(3,527)	(5,203)
Effect of exchange rate changes on cash and cash equivalents and restricted cash	4	(444)	(183)
Net increase (decrease) in cash and cash equivalents and restricted cash	265	(1,220)	(1,757)
Cash and cash equivalents and restricted cash, beginning of period	16,924	18,144	19,901
Cash and cash equivalents and restricted cash, end of period	$ 17,189	$ 16,924	$ 18,144
Supplemental Non-Cash Investing and Financing Activities			
Acquisitions of property and equipment included in liabilities	$ 2,272	$ 2,148	$ 2,251
Supplemental Disclosures			
Cash paid during the period for interest, net of amounts capitalized	$ 126	$ 152	$ 266
Cash paid during the period for income taxes, net of refunds	$ 1,119	$ 1,203	$ 561

The accompanying notes are an integral part of these 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, sell and lease high-performance fully electric vehicles and energy generation and storage systems, and offer services related to our 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.

Note 2 – Summary of Significant Accounting Policies

Principles of Consolidation

The accompanying consolidated financial statements have been prepared in conformity with 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 ASC 810, *Consolidation* (“ASC 810”), we consolidate any variable interest entity (“VIE”) of which we are the primary beneficiary. We have formed 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 16*, 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 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. The estimates used for, but not limited to, determining significant economic incentive for resale value guarantee arrangements, sales return reserves, income taxes, the collectability of accounts and finance receivables, inventory valuation, warranties, 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.

Revenue Recognition

Revenue by source

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

	Year Ended December 31,		
	2023	2022	2021
Automotive sales	$ 78,509	$ 67,210	$ 44,125
Automotive regulatory credits	1,790	1,776	1,465
Energy generation and storage sales	5,515	3,376	2,279
Services and other	8,319	6,091	3,802
Total revenues from sales and services	94,133	78,453	51,671
Automotive leasing	2,120	2,476	1,642
Energy generation and storage leasing	520	533	510
Total revenues	$ 96,773	$ 81,462	$ 53,823

Automotive Segment

Automotive Sales

Automotive sales revenue includes revenues related to cash and financing deliveries of new vehicles, and specific other features and services that meet the definition of a performance obligation under ASC 606, including access to our FSD Capability features and their ongoing maintenance, internet connectivity, free Supercharging programs 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, except sales we finance for which payments are collected over the contractual loan term. We also recognize a sales return reserve based on historical experience plus consideration for expected future market values, when we offer resale value guarantees or similar buyback terms. Other features and services such as access to our internet connectivity, unlimited free Supercharging 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. Other limited free Supercharging incentives are recognized based on actual usage or expiration, whichever is earlier. We recognize revenue related to these other features and services over the performance period, which is generally the expected ownership life of the vehicle. Revenue related to FSD Capability features is recognized when functionality is delivered to the customer and their ongoing maintenance is recognized over time. 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.

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. 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.

We offer resale value guarantees to our commercial banking partners in connection with certain vehicle leasing programs. Under these programs, we originate the lease with our end customer and immediately transfer the lease and the underlying vehicle to our commercial banking partner, with the transaction being accounted for as a sale under ASC 606. We receive upfront payment for the vehicle, do not bear casualty and credit risks during the lease term, and we provide a guarantee capped to a limit if they are unable to sell the vehicle at or above the vehicle's contract residual value at the end of the lease term. We estimate a guarantee liability in accordance with ASC 460, *Guarantees* and record it within other liabilities on our consolidated balance sheet. On a quarterly basis, we assess the estimated market value of vehicles sold under this program to determine whether there have been changes to the amount of expected resale value guarantee payments. As we accumulate more data related to the resale values of our vehicles or as market conditions change, there may be material changes to their estimated values. The total guarantee liability on vehicles sold under this program was immaterial as of December 31, 2023.

Deferred revenue related to the access to our FSD Capability features and their ongoing maintenance, internet connectivity, free Supercharging programs and over-the-air software updates primarily on automotive sales consisted of the following (in millions):

	Year Ended December 31,	
	2023	**2022**
Deferred revenue— beginning of period	$ 2,913	$ 2,382
Additions	1,201	1,178
Net changes in liability for pre-existing contracts	17	(67)
Revenue recognized	(595)	(580)
Deferred revenue— end of period	$ 3,536	$ 2,913

Deferred revenue is equivalent to the total transaction price allocated to the performance obligations that are unsatisfied, or partially unsatisfied, as of the balance sheet date. Revenue recognized from the deferred revenue balance as of December 31, 2022 was $469 million for the year ended December 31, 2023. We had recognized revenue of $472 million from the deferred revenue balance as of December 31, 2021, for the year ended December 31, 2022, primarily related to the general FSD Capability feature release in North America in the fourth quarter of 2022. Of the total deferred revenue balance as of December 31, 2023, we expect to recognize $926 million of revenue in the next 12 months. The remaining balance will be recognized at the time of transfer of control of the product or over the performance period as discussed above in Automotive Sales.

We have been providing loans for financing our automotive deliveries in volume since fiscal year 2022. As of December 31, 2023 and 2022, we have recorded net financing receivables on the consolidated balance sheets, of which $242 million and $128 million, respectively, is recorded within Accounts receivable, net, for the current portion and $1.04 billion and $665 million, respectively, is recorded within Other non-current assets for the long-term portion.

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, which have negligible incremental costs associated with them, at the time control of the regulatory credits is transferred to the purchasing party. Deferred revenue related to sales of automotive regulatory credits was immaterial as of December 31, 2023 and 2022. Revenue recognized from the deferred revenue balance as of December 31, 2022 and 2021 was immaterial for the years ended December 31, 2023 and 2022. During the year ended December 31, 2022, we had also recognized $288 million in revenue due to changes in regulation which entitled us to additional consideration for credits sold previously.

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 generally required to return the vehicles to us. 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, 2023, 2022 and 2021, we recognized $1.86 billion, $1.75 billion and $1.25 billion of direct vehicle leasing revenue, respectively. As of December 31, 2023 and 2022, we had deferred $458 million and $407 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.

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, *Leases* ("ASC 842"), in certain countries in Asia and Europe. 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. Our 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 years ended December 31, 2023, 2022 and 2021, we recognized $215 million, $683 million and $369 million, respectively, of sales-type leasing revenue and $164 million, $427 million and $234 million, respectively, of sales-type leasing cost of revenue.

Services and Other Revenue

Services and other revenue consists of sales of used vehicles, non-warranty after-sales vehicle services, body shop and parts, paid Supercharging, vehicle insurance revenue and retail merchandise.

Revenues related to repair, maintenance and vehicle insurance 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, vehicle components, 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. We record in Deferred revenue any non-refundable prepayment amounts that are collected from customers and unearned insurance premiums, which is recognized as revenue ratably over the respective customer contract term. Deferred revenue excluding unearned insurance premiums was immaterial as of December 31, 2023 and 2022.

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, large commercial and utility grade customers. Sales of solar energy systems to residential and small scale commercial customers consist of the engineering, design and installation of the system. 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. 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 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.

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 to obtain a contract relate mainly to commissions paid to our sales personnel related to the sale of energy storage systems. As our contract costs related to energy storage system sales are typically fulfilled within one year, the costs to obtain a contract are expensed as incurred.

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. If an 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 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, which is recognized as revenue ratably over the respective customer contract term. As of December 31, 2023 and 2022, deferred revenue related to such customer payments amounted to $1.60 billion and $863 million, respectively, mainly due to contractual payment terms. Revenue recognized from the deferred revenue balance as of December 31, 2022 and 2021 was $571 million and $171 million for the years ended December 31, 2023 and 2022, respectively. 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, 2023, 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 $3.43 billion. Of this amount, we expect to recognize $1.05 billion in the next 12 months and the rest over the remaining performance obligation period.

We have been providing loans for financing our energy generation products in volume since fiscal year 2022. As of December 31, 2023 and 2022, we have recorded net financing receivables on the consolidated balance sheets, of which $31 million and $24 million, respectively, is recorded within Accounts receivable, net, for the current portion and $578 million and $387 million, respectively, is recorded within Other non-current assets for the long-term portion.

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, *Leases*. 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, which is recognized as revenue ratably over the respective customer contract term. As of December 31, 2023 and 2022, deferred revenue related to such customer payments amounted to $181 million and $191 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, 2023 and 2022, deferred revenue from rebates and incentives was immaterial.

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 and indirect materials, labor costs, manufacturing overhead, including depreciation costs of tooling and machinery, shipping and logistic costs, vehicle connectivity costs, FSD Capability ongoing maintenance 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. Additionally, cost of automotive sales revenue benefits from manufacturing credits earned.

Automotive Leasing

Cost of automotive leasing revenue includes the depreciation of operating lease vehicles, cost of goods sold associated with direct sales-type leases and warranty expense related to leased vehicles.

Services and Other

Costs of services and other revenue includes cost of used vehicles including refurbishment costs, costs associated with providing non-warranty after-sales services, costs associated with our body shops and part sales, costs of paid Supercharging, costs to provide vehicle insurance and costs for retail merchandise.

Energy Generation and Storage Segment

Energy Generation and Storage

Cost of energy generation and storage revenue includes direct and indirect material and labor costs, overhead costs, freight, warranty expense, 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. Additionally, cost of energy generation and storage revenue benefits from manufacturing credits earned. In agreements for solar energy systems 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.

Research and Development Costs

Research and development costs are expensed as incurred.

Income Taxes

We are subject to income taxes in the U.S. and in many foreign jurisdictions. 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 monitor the realizability of our deferred tax assets taking into account all relevant factors at each reporting period. 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 that are not more likely than not to be realized. In completing our assessment of realizability of our deferred tax assets, we consider our history of income (loss) measured at pre-tax income (loss) adjusted for permanent book-tax differences on a jurisdictional basis, volatility in actual earnings, excess tax benefits related to stock-based compensation in recent prior years, and impacts of the timing of reversal of existing temporary differences. We also rely on our assessment of the Company’s projected future results of business operations, including uncertainty in future operating results relative to historical results, volatility in the market price of our common stock and its performance over time, variable macroeconomic conditions impacting our ability to forecast future taxable income, and changes in business that may affect the existence and magnitude of future taxable income. Our valuation allowance assessment is based on our best estimate of future results considering all available information.

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 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 in our consolidated balance sheets.

Comprehensive Income

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

Stock-Based Compensation

We use the fair value method of accounting for our stock options and RSUs granted to employees and for our 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.

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 have entered 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 have been significant fluctuations in net (loss) income attributable to noncontrolling interests and redeemable noncontrolling interests in subsidiaries due to changes in the liquidation provisions as time-based milestones have been reached.

Net Income per Share of Common Stock Attributable to Common Stockholders

Basic net income per share of common stock attributable to common stockholders is calculated by dividing net income attributable to common stockholders by the weighted-average shares of common stock outstanding for the period. 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 per share of common stock attributable to common stockholders when their effect is dilutive.

Furthermore, in connection with the offerings of our convertible senior notes, we entered into convertible note hedges and warrants (see Note 11, *Debt*). However, our convertible note hedges are not included when calculating potentially dilutive shares since their effect is always anti-dilutive. The strike price on the warrants were below our average share price during the period and were included in the tables below. Warrants are included in the weighted-average shares used in computing basic net income per share of common stock in the period(s) they are settled.

The following table presents the reconciliation of net income attributable to common stockholders to net income used in computing basic and diluted net income per share of common stock (in millions):

	Year Ended December 31,		
	2023	2022	2021
Net income attributable to common stockholders	$ 14,997	$ 12,556	$ 5,519
Less: Buy-out of noncontrolling interest	(2)	(27)	(5)
Net income used in computing basic net income per share of common stock	14,999	12,583	5,524
Less: Dilutive convertible debt	—	(1)	(9)
Net income used in computing diluted net income per share of common stock	$ 14,999	$ 12,584	$ 5,533

The following table presents the reconciliation of basic to diluted weighted average shares used in computing net income per share of common stock attributable to common stockholders (in millions):

	Year Ended December 31,		
	2023	**2022**	**2021**
Weighted average shares used in computing net income per share of common stock, basic	3,174	3,130	2,959
Add:			
Stock-based awards	298	310	292
Convertible senior notes	2	3	29
Warrants	11	32	106
Weighted average shares used in computing net income per share of common stock, diluted	3,485	3,475	3,386

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

	Year Ended December 31,		
	2023	**2022**	**2021**
Stock-based awards	12	4	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, in 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 U.S. government securities, money market funds and commercial paper.

Restricted Cash

We maintain certain cash balances restricted as to withdrawal or use. Our restricted cash is comprised primarily of cash held to service certain payments under various secured debt facilities. In addition, restricted cash includes cash held as collateral for sales to lease partners with a resale value guarantee, letters of credit, real estate leases and deposits held for our insurance services. 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, 2023	December 31, 2022	December 31, 2021
Cash and cash equivalents	$ 16,398	$ 16,253	$ 17,576
Restricted cash included in prepaid expenses and other current assets	543	294	345
Restricted cash included in other non-current assets	248	377	223
Total as presented in the consolidated statements of cash flows	$ 17,189	$ 16,924	$ 18,144

Investments

Investments may be comprised of a combination of marketable securities, including U.S. government securities, corporate debt securities, commercial paper, time deposits, and certain certificates of deposit, which are all designated as available-for-sale and reported at estimated fair value, with unrealized gains and losses recorded in accumulated other comprehensive income which is included within stockholders' equity. Available-for-sale marketable securities with maturities greater than three months at the date of purchase are included in short-term investments in our consolidated balance sheets. Interest, dividends, amortization and accretion of purchase premiums and discounts on these investments are included within Interest income in our consolidated statements of operations.

The cost of available-for-sale investments sold is based on the specific identification method. Realized gains and losses on the sale of available-for-sale investments are recorded in Other income (expense), net.

We regularly review all of our investments for declines in fair value. The review includes but is not limited to (i) the consideration of the cause of the decline, (ii) any currently recorded expected credit losses and (iii) the creditworthiness of the respective security issuers. The amortized cost basis of our investments approximates its fair value.

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 and government rebates already passed through to customers. 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 are 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. As of December 31, 2023 and 2022, we had $207 million and $753 million, respectively, of long-term government rebates receivable in Other non-current assets in our consolidated balance sheets.

Financing Receivables

We provide financing options to our customers for our automotive and energy products. Financing receivables are carried at amortized cost, net of allowance for loan losses. Provisions for loan losses are charged to operations in amounts sufficient to maintain the allowance for loan losses at levels considered adequate to cover expected credit losses on the financing receivables. 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.

When originating consumer receivables, we review the credit application, the proposed contract terms, credit bureau information (e.g., FICO score) and other information. Our evaluation emphasizes the applicant's ability to pay and creditworthiness focusing on payment, affordability, and applicant credit history as key considerations. Generally, all customers in this portfolio have strong creditworthiness at loan origination.

After origination, we review the credit quality of retail financing based on customer payment activity and aging analysis. For all financing receivables, we define “past due” as any payment, including principal and interest, which is at least 31 days past the contractual due date. As of December 31, 2023 and 2022, the vast majority of our financing receivables were at current status with only an immaterial balance being past due. As of December 31, 2023, the majority of our financing receivables, excluding MyPower notes receivable, were originated in 2023 and 2022, and as of December 31, 2022, the majority of our financing receivables, excluding MyPower notes receivable, were originated in 2022.

We have customer notes receivable under the legacy MyPower loan program, which provided residential customers with the option to finance the purchase of a solar energy system through a 30-year loan and were all originated prior to year 2018. The outstanding balances, net of any allowance for expected credit losses, are presented on the consolidated balance sheets 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. As of December 31, 2023 and 2022, the total outstanding balance of MyPower customer notes receivable, net of allowance for expected credit losses, was $266 million and $280 million, respectively, of which $5 million and $7 million were due in the next 12 months as of December 31, 2023 and 2022, respectively. As of December 31, 2023 and 2022, the allowance for expected credit losses was $36 million and $37 million, respectively.

Concentration of Risk

Credit Risk

Financial instruments that potentially subject us to a concentration of credit risk consist of cash, cash equivalents, investments, restricted cash, accounts receivable and other finance receivables. Our cash and investments balances are primarily on deposit at high credit quality financial institutions or invested in money market funds. These deposits are typically in excess of insured limits. As of December 31, 2023 and 2022, no entity represented 10% or more of our total receivables balance.

Supply Risk

We are dependent on our suppliers, including 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.

Inventory Valuation

Inventories are stated at the lower of cost or net realizable value. Cost is computed using standard cost for vehicles and energy products, which approximates actual cost on a first-in, first-out basis. 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 write-downs 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 are classified as operating lease vehicles at cost less accumulated depreciation. We generally depreciate their cost, less residual 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, 2023 and 2022 was $7.36 billion and $6.08 billion, respectively. Operating lease vehicles on the consolidated balance sheets are presented net of accumulated depreciation of $1.38 billion and $1.04 billion as of December 31, 2023 and 2022, respectively.

Digital Assets, Net

We currently account for all digital assets held as indefinite-lived intangible assets in accordance with ASC 350, *Intangibles—Goodwill and Other*. We have ownership of and control over our digital assets and we may use third-party custodial services to secure it. 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 determine the fair value of our digital assets on a nonrecurring basis in accordance with ASC 820, *Fair Value Measurement* (“ASC 820”), based on quoted prices on the active exchange(s) that we have determined is the principal market for such assets (Level I inputs). We perform an analysis each quarter to identify whether events or changes in circumstances, principally decreases in the quoted prices on active exchanges, indicate that it is more likely than not that our digital assets are impaired. In determining if an impairment has occurred, we consider the lowest market price of one unit of digital asset quoted on the active exchange since acquiring the digital asset. When the then current carrying value of a digital asset exceeds the fair value determined each quarter, an impairment loss has occurred with respect to those digital assets in the amount equal to the difference between their carrying values and the prices determined.

Impairment losses are recognized within Restructuring and other in the consolidated statements of operations in the period in which the impairment is identified. Gains are not recorded until realized upon sale(s), at which point they are presented net of any impairment losses for the same digital assets held within Restructuring and other. In determining the gain to be recognized upon sale, we calculate the difference between the sales price and carrying value of the digital assets sold immediately prior to sale.

See Note 3, *Digital Assets, Net*, for further information regarding digital assets.

Solar Energy Systems, Net

We are the lessor of solar energy systems. 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	3 to 15 years
Tooling	4 to 7 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 years ended December 31, 2023, 2022 and 2021, we have recognized no material impairments of our long-lived assets.

Intangible assets with definite lives are amortized on a straight-line basis over their estimated useful lives, which range from seven 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, 2023, 2022, and 2021, we did not recognize any impairment of goodwill.

Capitalization of Software Costs

We capitalize costs incurred in the development of internal use software, 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. Such costs are amortized on a straight-line basis over their estimated useful life of three to five years.

Software development costs incurred in development of software to be sold, leased, or otherwise marketed, incurred subsequent to the establishment of technological feasibility and prior to the general availability of the software are capitalized when they are expected to become significant. Such costs are amortized over the estimated useful life of the applicable software once it is made generally available to our customers.

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. For the years ended December 31, 2023, 2022, and 2021, we have recognized no impairments of capitalized software costs.

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 of the respective subsidiary. Transaction gains and losses are recognized in Other income (expense), net, in the consolidated statements of operations. For the years ended December 31, 2023, 2022 and 2021, we recorded a net foreign currency transaction gain of $122 million, loss of $89 million and gain of $97 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 if 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 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. For liabilities that we are entitled to receive indemnification from our suppliers, we record receivables for the contractually obligated amounts on the consolidated balance sheets 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. 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, our accrued warranty balance is primarily related to our automotive segment. Accrued warranty activity consisted of the following (in millions):

	Year Ended December 31,		
	2023	**2022**	**2021**
Accrued warranty—beginning of period	$ 3,505	$ 2,101	$ 1,468
Warranty costs incurred	(1,225)	(803)	(525)
Net changes in liability for pre-existing warranties, including expirations and foreign exchange impact	539	522	102
Provision for warranty	2,333	1,685	1,056
Accrued warranty—end of period	$ 5,152	$ 3,505	$ 2,101

Customer Deposits

Customer deposits primarily consist of refundable 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. Customer deposits also include prepayments on contracts that can be cancelled without significant penalties, such as vehicle maintenance plans. Customer deposits are included in Accrued liabilities and other on the consolidated balance sheets until refunded, forfeited or applied towards the customer's purchase balance.

Government Assistance Programs and Incentives

Globally, the operation of our business is impacted by various government programs, incentives, and other arrangements. Government incentives are recorded in our consolidated financial statements in accordance with their purpose as a reduction of expense, or an offset to the related capital asset. The benefit is generally recorded when all conditions attached to the incentive have been met or are expected to be met and there is reasonable assurance of their receipt.

The IRA Incentives

On August 16, 2022, the IRA was enacted into law and is effective for taxable years beginning after December 31, 2022. The IRA includes multiple incentives to promote clean energy, electric vehicles, battery and energy storage manufacture or purchase, in addition to a new corporate alternative minimum tax of 15% on adjusted financial statement income of corporations with profits greater than $1 billion. Some of these measures are expected to materially affect our consolidated financial statements. For the year ended December 31, 2023, the impact from our IRA incentive was primarily a reduction of our material costs in our consolidated statement of operations. We will continue to evaluate the effects of the IRA as more guidance is issued and the relevant implications to our consolidated financial statements.

Gigafactory New York—New York State Investment and Lease

We have a lease through the Research Foundation for 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. Under the terms of the arrangement, the SUNY Foundation paid for a majority of the construction costs related to the manufacturing facility and the acquisition and commissioning of certain manufacturing equipment; and we are responsible for any construction or equipment costs in excess of such amount (refer to Note 15, *Commitments and Contingencies*). This incentive reduces the related lease costs of the facility within the Energy generation and storage cost of revenues and operating expense line items in our consolidated statements of operations.

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 certain incentives to be used in connection with eligible capital investments at Gigafactory Shanghai (refer to Note 15, *Commitments and Contingencies*). For the year ended December 31, 2022, we received grant funding of $76 million. These incentives offset the related costs of our facilities and are recorded as a reduction of the cost of the capital investment within the Property, plant and equipment, net line item in our consolidated balance sheets. The incentive therefore reduces the depreciation expense over the useful lives of the related equipment.

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 million in consideration of capital investment and hiring targets that were met at Gigafactory Nevada.

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. This incentive is recorded as a reduction of the related expenses within the Cost of automotive revenues and operating expense line items of our consolidated statements of operations. As of December 31, 2023, the grant funding related to property taxes paid were immaterial.

Defined Contribution Plan

We have a 401(k) savings plan in the U.S. that is intended to qualify as a deferred salary arrangement under Section 401(k) of the Internal Revenue Code and a number of savings plans internationally. Under the 401(k) savings plan, participating employees may elect to contribute up to 90% of their eligible compensation, subject to certain limitations. Beginning in January 2022, we began to match 50% of each employee's contributions up to a maximum of 6% (capped at $3,000) of the employee's eligible compensation, vested upon one year of service. During the years ended December 31, 2023 and 2022, we recognized $99 million and $91 million, respectively, of expenses related to employer contributions for the 401(k) savings plan.

Recent Accounting Pronouncements

Recently issued accounting pronouncements not yet adopted

In November 2023, the Financial Accounting Standards Board ("FASB") issued ASU No. 2023-07, Improvements to Reportable Segment Disclosures (Topic 280). This ASU updates reportable segment disclosure requirements by requiring disclosures of significant reportable segment expenses that are regularly provided to the Chief Operating Decision Maker ("CODM") and included within each reported measure of a segment's profit or loss. This ASU also requires disclosure of the title and position of the individual identified as the CODM and an explanation of how the CODM uses the reported measures of a segment's profit or loss in assessing segment performance and deciding how to allocate resources. The ASU is effective for annual periods beginning after December 15, 2023, and interim periods within fiscal years beginning after December 15, 2024. Adoption of the ASU should be applied retrospectively to all prior periods presented in the financial statements. Early adoption is also permitted. This ASU will likely result in us including the additional required disclosures when adopted. We are currently evaluating the provisions of this ASU and expect to adopt them for the year ending December 31, 2024.

In December 2023, the FASB issued ASU No. 2023-08, Accounting for and Disclosure of Crypto Assets (Subtopic 350-60). This ASU requires certain crypto assets to be measured at fair value separately in the balance sheet and income statement each reporting period. This ASU also enhances the other intangible asset disclosure requirements by requiring the name, cost basis, fair value, and number of units for each significant crypto holding. The ASU is effective for annual periods beginning after December 15, 2024, including interim periods within those fiscal years. Adoption of the ASU requires a cumulative-effect adjustment to the opening balance of retained earnings as of the beginning of the annual reporting period in which an entity adopts the amendments. Early adoption is also permitted, including adoption in an interim period. However, if the ASU is early adopted in an interim period, an entity must adopt the ASU as of the beginning of the fiscal year that includes the interim period. This ASU will result in gains and losses recorded in the consolidated financial statements of operations and additional disclosures when adopted. We are currently evaluating the adoption of this ASU and it will affect the carrying value of our crypto assets held and the gains and losses relating thereto, once adopted.

In December 2023, the FASB issued ASU No. 2023-09, Improvements to Income Tax Disclosures (Topic 740). The ASU requires disaggregated information about a reporting entity's effective tax rate reconciliation as well as additional information on income taxes paid. The ASU is effective on a prospective basis for annual periods beginning after December 15, 2024. Early adoption is also permitted for annual financial statements that have not yet been issued or made available for issuance. This ASU will result in the required additional disclosures being included in our consolidated financial statements, once adopted.

Recently adopted accounting pronouncements

In October 2021, the FASB issued ASU No. 2021-08, Accounting for Contract Assets and Contract Liabilities from Contracts with Customers (Topic 805). This ASU requires an acquirer in a business combination to recognize and measure contract assets and contract liabilities (deferred revenue) from acquired contracts using the revenue recognition guidance in Topic 606. At the acquisition date, the acquirer applies the revenue model as if it had originated the acquired contracts. The ASU is effective for annual periods beginning after December 15, 2022, including interim periods within those fiscal years. We adopted this ASU prospectively on January 1, 2023. This ASU has not and is currently not expected to have a material impact on our consolidated financial statements.

In March 2022, the FASB issued ASU 2022-02, Troubled Debt Restructurings and Vintage Disclosures. This ASU eliminates the accounting guidance for troubled debt restructurings by creditors that have adopted ASU 2016-13, Measurement of Credit Losses on Financial Instruments, which we adopted on January 1, 2020. This ASU also enhances the disclosure requirements for certain loan refinancing and restructurings by creditors when a borrower is experiencing financial difficulty. In addition, the ASU amends the guidance on vintage disclosures to require entities to disclose current period gross write-offs by year of origination for financing receivables and net investments in leases within the scope of ASC 326-20. The ASU is effective for annual periods beginning after December 15, 2022, including interim periods within those fiscal years. We adopted the ASU prospectively on January 1, 2023. This ASU has not and is currently not expected to have a material impact on our consolidated financial statements.

ASU 2020-06

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 debt 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.

On January 1, 2021, we adopted the ASU using the modified retrospective method. We recognized a favorable $211 million cumulative effect of initially applying the ASU as an adjustment to the January 1, 2021 opening balance of accumulated deficit. Due to the recombination of the equity conversion component of our convertible debt remaining outstanding, additional paid in capital was reduced by $474 million and convertible senior notes (mezzanine equity) was reduced by $51 million. The removal of the remaining debt discounts recorded for this previous separation had the effect of increasing our net debt balance by $269 million and we reduced property, plant and equipment by $45 million related to previously capitalized interest. The prior period consolidated financial statements have not been retrospectively adjusted and continue to be reported under the accounting standards in effect for those periods.

Note 3 – Digital Assets, Net

During the years ended December 31, 2023 and 2022, we purchased and/or received immaterial amounts of digital assets. During the year ended December 31, 2023, we recorded an immaterial amount of impairment losses on digital assets. During the year ended December 31, 2022, we recorded $204 million of impairment losses on digital assets and realized gains of $64 million in connection with converting our holdings of digital assets into fiat currency. The gains are presented net of impairment losses in Restructuring and other in the consolidated statements of operations. As of December 31, 2023 and 2022, the carrying value of our digital assets held reflects cumulative impairment of $204 million.

Note 4 – Goodwill and Intangible Assets

Goodwill increased $59 million within the automotive segment from $194 million as of December 31, 2022 to $253 million as of December 31, 2023 primarily from a business combination, net of the impact of a divestiture. There were no accumulated impairment losses as of December 31, 2023 and 2022.

The net carrying value of our intangible assets decreased from $215 million as of December 31, 2022 to $178 million as of December 31, 2023 mainly from amortization.

Note 5 – Fair Value of Financial Instruments

ASC 820, *Fair Value Measurements* ("ASC 820") 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, 2023				December 31, 2022			
	Fair Value	Level I	Level II	Level III	Fair Value	Level I	Level II	Level III
Money market funds	$ 109	$ 109	$ —	$ —	$ 2,188	$ 2,188	$ —	$ —
U.S. government securities	5,136	—	5,136	—	894	—	894	—
Corporate debt securities	480	—	480	—	885	—	885	—
Certificates of deposit and time deposits	6,996	—	6,996	—	4,253	—	4,253	—
Commercial paper	470	—	470	—	—	—	—	—
Total	$ 13,191	$ 109	$ 13,082	$ —	$ 8,220	$ 2,188	$ 6,032	$ —

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 U.S. government securities, certificates of deposit, commercial paper, time deposits and corporate debt securities are classified within Level II of the fair value hierarchy and the market approach was used to determine fair value of these investments.

Our cash, cash equivalents and investments classified by security type as of December 31, 2023 and 2022 consisted of the following (in millions):

	December 31, 2023					
	Adjusted Cost	Gross Unrealized Gains	Gross Unrealized Losses	Fair Value	Cash and Cash Equivalents	Short-Term Investments
Cash	$ 15,903	$ —	$ —	$ 15,903	$ 15,903	$ —
Money market funds	109	—	—	109	109	—
U.S. government securities	5,136	1	(1)	5,136	277	4,859
Corporate debt securities	485	1	(6)	480	—	480
Certificates of deposit and time deposits	6,995	1	—	6,996	—	6,996
Commercial paper	470	—	—	470	109	361
Total cash, cash equivalents and short-term investments	$ 29,098	$ 3	$ (7)	$ 29,094	$ 16,398	$ 12,696

	December 31, 2022					
	Adjusted Cost	Gross Unrealized Gains	Gross Unrealized Losses	Fair Value	Cash and Cash Equivalents	Short-Term Investments
Cash	$ 13,965	$ —	$ —	$ 13,965	$ 13,965	$ —
Money market funds	2,188	—	—	2,188	2,188	—
U.S. government securities	897	—	(3)	894	—	894
Corporate debt securities	907	—	(22)	885	—	885
Certificates of deposit and time deposits	4,252	1	—	4,253	100	4,153
Total cash, cash equivalents and short-term investments	$ 22,209	$ 1	$ (25)	$ 22,185	$ 16,253	$ 5,932

We record gross realized gains, losses and credit losses as a component of Other income (expense), net in the consolidated statements of operations. For the years ended December 31, 2023 and 2022, we did not recognize any material gross realized gains, losses or credit losses. The ending allowance balances for credit losses were immaterial as of December 31, 2023 and 2022. We have determined that the gross unrealized losses on our investments as of December 31, 2023 and 2022 were temporary in nature.

The following table summarizes the fair value of our investments by stated contractual maturities as of December 31, 2023 (in millions):

Due in 1 year or less	$ 12,374
Due in 1 year through 5 years	297
Due in 5 years through 10 years	25
Total	$ 12,696

Disclosure of Fair Values

Our financial instruments that are not re-measured at fair value include accounts receivable, financing receivables, other receivables, digital assets, accounts payable, accrued liabilities, customer deposits and debt. The carrying values of these financial instruments materially approximate their fair values, other than our 2.00% Convertible Senior Notes due in 2024 ("2024 Notes") and digital assets.

We estimate the fair value of the 2024 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 digital assets based on quoted prices in active markets (Level I). The following table presents the estimated fair values and the carrying values (in millions):

	December 31, 2023		December 31, 2022	
	Carrying Value	Fair Value	Carrying Value	Fair Value
2024 Notes	$ 37	$ 443	$ 37	$ 223
Digital assets, net	$ 184	$ 487	$ 184	$ 191

Note 6 – Inventory

Our inventory consisted of the following (in millions):

	December 31, 2023	December 31, 2022
Raw materials	$ 5,390	$ 6,137
Work in process	2,016	2,385
Finished goods (1)	5,049	3,475
Service parts	1,171	842
Total	$ 13,626	$ 12,839

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

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, 2023, 2022 and 2021 we recorded write-downs of $233 million, $144 million and $106 million, respectively, in Cost of revenues in the consolidated statements of operations.

Note 7 – Solar Energy Systems, Net

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

	December 31, 2023	December 31, 2022
Solar energy systems in service	$ 6,755	$ 6,785
Initial direct costs related to customer solar energy system lease acquisition costs	104	104
	6,859	6,889
Less: accumulated depreciation and amortization (1)	(1,643)	(1,418)
	5,216	5,471
Solar energy systems under construction	1	2
Solar energy systems pending interconnection	12	16
Solar energy systems, net (2)	$ 5,229	$ 5,489

(1) Depreciation and amortization expense during the years ended December 31, 2023, 2022 and 2021 was $235 million, $235 million and $236 million, respectively.

(2) As of December 31, 2023 and 2022, there were $740 million and $802 million, respectively, of gross solar energy systems under lease pass-through fund arrangements with accumulated depreciation of $157 million and $148 million, respectively.

Note 8 – Property, Plant and Equipment, Net

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

	December 31, 2023	December 31, 2022
Machinery, equipment, vehicles and office furniture	$ 16,372	$ 13,558
Tooling	3,147	2,579
Leasehold improvements	3,168	2,366
Land and buildings	9,505	7,751
Computer equipment, hardware and software	3,799	2,072
Construction in progress	5,791	4,263
	41,782	32,589
Less: Accumulated depreciation	(12,057)	(9,041)
Total	$ 29,725	$ 23,548

Construction in progress is primarily comprised of ongoing construction and expansion of our facilities, and equipment and tooling related to the manufacturing of our products. Completed assets are transferred to their respective asset classes and depreciation begins when an asset is ready for its intended use.

Depreciation expense during the years ended December 31, 2023, 2022 and 2021 was $3.33 billion, $2.42 billion and $1.91 billion, 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, 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, 2023 and 2022, we had cumulatively capitalized gross costs of $2.02 billion and $2.01 billion, respectively, on the consolidated balance sheets in relation to the production equipment under our Panasonic arrangement.

Note 9 – Accrued Liabilities and Other

Our accrued liabilities and other current liabilities consisted of the following (in millions):

	December 31, 2023	December 31, 2022
Accrued purchases (1)	$ 2,721	$ 2,747
Accrued warranty reserve, current portion	1,546	1,025
Payroll and related costs	1,325	1,026
Taxes payable (2)	1,204	1,235
Customer deposits	876	1,063
Operating lease liabilities, current portion	672	485
Sales return reserve, current portion	219	270
Other current liabilities	517	354
Total	$ 9,080	$ 8,205

(1) Accrued purchases primarily reflects receipts of goods and services for which we had not yet been invoiced. 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, income tax, sales tax, property tax and use tax payables.

Note 10 – Other Long-Term Liabilities

Our other long-term liabilities consisted of the following (in millions):

	December 31, 2023	December 31, 2022
Operating lease liabilities	$ 3,671	$ 2,164
Accrued warranty reserve	3,606	2,480
Other non-current liabilities	876	686
Total other long-term liabilities	$ 8,153	$ 5,330

Note 11 – Debt

The following is a summary of our debt and finance leases as of December 31, 2023 (in millions):

	Net Carrying Value		Unpaid Principal Balance	Unused Committed Amount (1)	Contractual Interest Rates	Contractual Maturity Date
	Current	Long-Term				
Recourse debt:						
2024 Notes	$ 37	$ —	$ 37	$ —	2.00 %	May 2024
RCF Credit Agreement	—	—	—	5,000	Not applicable	January 2028
Solar Bonds	—	7	7	—	4.70-5.75%	March 2025 - January 2031
Other	—	—	—	28	Not applicable	December 2026
Total recourse debt	37	7	44	5,028		
Non-recourse debt:						
Automotive Asset-backed Notes	1,906	2,337	4,259	—	0.60-6.57%	July 2024-May 2031
Solar Asset-backed Notes	4	8	13	—	4.80 %	December 2026
Cash Equity Debt	28	330	367	—	5.25-5.81%	July 2033-January 2035
Total non-recourse debt	1,938	2,675	4,639	—		
Total debt	1,975	2,682	$ 4,683	$ 5,028		
Finance leases	398	175				
Total debt and finance leases	$ 2,373	$ 2,857				

The following is a summary of our debt and finance leases as of December 31, 2022 (in millions):

	Net Carrying Value		Unpaid Principal Balance	Unused Committed Amount (2)	Contractual Interest Rates	Contractual Maturity Date
	Current	Long-Term				
Recourse debt:						
2024 Notes	$ —	$ 37	$ 37	$ —	2.00 %	May 2024
Credit Agreement	—	—	—	2,266	Not applicable	July 2023
Solar Bonds	—	7	7	—	4.70-5.75%	March 2025 - January 2031
Total recourse debt	—	44	44	2,266		
Non-recourse debt:						
Automotive Asset-backed Notes	984	613	1,603	—	0.36-4.64%	December 2023-September 2025
Solar Asset-backed Notes	4	13	17	—	4.80 %	December 2026
Cash Equity Debt	28	359	397	—	5.25-5.81%	July 2033-January 2035
Automotive Lease-backed Credit Facilities	—	—	—	151	Not applicable	September 2024
Total non-recourse debt	1,016	985	2,017	151		
Total debt	1,016	1,029	$ 2,061	$ 2,417		
Finance leases	486	568				
Total debt and finance leases	$ 1,502	$ 1,597				

(1) There are no restrictions on draw-down or use for general corporate purposes with respect to any available committed funds under our RCF Credit Agreement, except certain specified conditions prior to draw-down. Refer to the section below for the terms of the facility.

(2) There were no restrictions on draw-down or use for general corporate purposes with respect to any available committed funds under our credit facilities, 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 or various other assets as 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 debt discounts or deferred issuance costs. As of December 31, 2023, we were in material compliance with all financial debt covenants.

2024 Notes

The closing price of our common stock continued to exceed 130% of the applicable conversion price of our 2024 Notes on at least 20 of the last 30 consecutive trading days of each quarter in 2023, causing the 2024 Notes to be convertible by their holders in the subsequent quarter. As of December 31, 2023, the if-converted value of the notes exceeds the outstanding principal amount by $406 million. Upon conversion, the 2024 Notes will be settled in cash, shares of our common stock or a combination thereof, at our election.

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 January 2023, we entered into a 5-year senior unsecured revolving credit facility (the “RCF Credit Agreement”) with a syndicate of banks to replace the existing Credit Agreement, which was terminated. The RCF Credit Agreement contains two optional one-year extensions and has a total commitment of up to $5.00 billion, which could be increased up to $7.00 billion under certain circumstances. The underlying borrowings may be used for general corporate purposes. Borrowed funds accrue interest at a variable rate equal to: (i) for dollar-denominated loans, at our election, (a) Term SOFR (the forward-looking secured overnight financing rate) plus 0.10%, or (b) an alternate base rate; (ii) for loans denominated in pounds sterling, SONIA (the sterling overnight index average reference rate); or (iii) for loans denominated in euros, an adjusted EURIBOR (euro interbank offered rate); in each case, plus an applicable margin. The applicable margin will be based on the rating assigned to our senior, unsecured long-term indebtedness (the “Credit Rating”) from time to time. The fee for undrawn amounts is variable based on the Credit Rating and is currently 0.125% per annum.

Automotive Asset-backed Notes

From time to time, we transfer receivables and/or beneficial interests related to certain vehicles (either leased or financed) 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 or financing 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.

In 2023, we transferred beneficial interests related to certain leased vehicles and financing receivables into SPEs and issued $3.93 billion in aggregate principal amount of Automotive Asset-backed Notes, with terms similar to our other previously issued Automotive Asset-backed Notes. The proceeds from the issuance, net of debt issuance costs, were $3.92 billion.

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.

Automotive Lease-backed Credit Facilities

In the third quarter of 2023, we terminated our Automotive Lease-backed Credit Facilities and the previously committed funds are no longer available for future borrowings.

Pledged Assets

As of December 31, 2023 and 2022, we had pledged or restricted $4.64 billion and $2.02 billion of our assets (consisting principally of operating lease vehicles, financing receivables, restricted cash, 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, 2023 were as follows (in millions):

	Recourse debt	Non-recourse debt	Total
2024	$ 37	$ 1,941	$ 1,978
2025	4	1,663	1,667
2026	—	494	494
2027	—	276	276
2028	—	44	44
Thereafter	3	221	224
Total	$ 44	$ 4,639	$ 4,683

Note 12 – Leases

We have entered into various operating and finance lease agreements for certain of our offices, manufacturing and warehouse facilities, retail and service locations, data centers, 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. 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 within Interest expense in the consolidated statements of operations.

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

	December 31, 2023	December 31, 2022
Operating leases:		
Operating lease right-of-use assets	$ 4,180	$ 2,563
Accrued liabilities and other	$ 672	$ 485
Other long-term liabilities	3,671	2,164
Total operating lease liabilities	$ 4,343	$ 2,649
Finance leases:		
Solar energy systems, net	$ 23	$ 25
Property, plant and equipment, net	601	1,094
Total finance lease assets	$ 624	$ 1,119
Current portion of long-term debt and finance leases	$ 398	$ 486
Long-term debt and finance leases, net of current portion	175	568
Total finance lease liabilities	$ 573	$ 1,054

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

	Year Ended December 31,		
	2023	2022	2021
Operating lease expense:			
Operating lease expense (1)	$ 1,153	$ 798	$ 627
Finance lease expense:			
Amortization of leased assets	$ 506	$ 493	$ 415
Interest on lease liabilities	45	72	89
Total finance lease expense	$ 551	$ 565	$ 504
Total lease expense	$ 1,704	$ 1,363	$ 1,131

(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, 2023	December 31, 2022
Weighted-average remaining lease term:		
Operating leases	7.4 years	6.4 years
Finance leases	2.3 years	3.1 years
Weighted-average discount rate:		
Operating leases	5.6 %	5.3 %
Finance leases	5.5 %	5.7 %

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

	Year Ended December 31,		
	2023	2022	2021
Cash paid for amounts included in the measurement of lease liabilities:			
Operating cash outflows from operating leases	$ 1,084	$ 754	$ 616
Operating cash outflows from finance leases (interest payments)	$ 47	$ 75	$ 89
Leased assets obtained in exchange for finance lease liabilities	$ 10	$ 58	$ 486
Leased assets obtained in exchange for operating lease liabilities	$ 2,170	$ 1,059	$ 818

As of December 31, 2023, the maturities of our operating and finance lease liabilities (excluding short-term leases) are as follows (in millions):

	Operating Leases	Finance Leases
2024	$ 892	$ 418
2025	831	81
2026	706	57
2027	603	38
2028	508	2
Thereafter	1,820	4
Total minimum lease payments	5,360	600
Less: Interest	1,017	27
Present value of lease obligations	4,343	573
Less: Current portion	672	398
Long-term portion of lease obligations	$ 3,671	$ 175

As of December 31, 2023, we have excluded from the table above additional operating leases that have not yet commenced with aggregate rent payments of $1.53 billion. These operating leases will commence between fiscal year 2024 and 2025 with lease terms of 2 years to 20 years.

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, 2023, 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
2024	$ 1,405	$ 227
2025	960	214
2026	461	210
2027	227	102
2028	197	25
Thereafter	1,492	2
Gross lease receivables	$ 4,742	$ 780

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 sheets 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. Lease receivables relating to sales-type leases are presented on the consolidated balance sheets as follows (in millions):

	December 31, 2023	December 31, 2022
Gross lease receivables	$ 780	$ 837
Unearned interest income	(78)	(95)
Allowance for expected credit losses	(6)	(4)
Net investment in sales-type leases	$ 696	$ 738
Reported as:		
Prepaid expenses and other current assets	$ 189	$ 164
Other non-current assets	507	574
Net investment in sales-type leases	$ 696	$ 738

Lease Pass-Through Financing Obligation

As of December 31, 2023, we have five 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.

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. As of December 31, 2023, 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):

2024	$ 18
2025	27
2026	28
2027	29
2028	29
Thereafter	337
Total	$ 468

Note 13 – 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, 2023, 131.1 million shares were reserved and available for issuance under the 2019 Plan.

The following table summarizes our stock option and RSU activity for the year ended December 31, 2023:

	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
Beginning of period	343,564	$ 30.65			21,333	$ 162.32
Granted	9,521	$ 226.50			11,743	$ 228.33
Exercised or released	(7,626)	$ 43.07			(11,085)	$ 116.47
Cancelled	(1,438)	$ 194.23			(2,903)	$ 192.22
End of period	344,021	$ 35.11	4.31	$ 73.57	19,088	$ 225.01
Vested and expected to vest, December 31, 2023	340,884	$ 33.38	4.27	$ 73.45	18,446	$ 225.76
Exercisable and vested, December 31, 2023	329,124	$ 27.07	4.11	$ 72.90		

The weighted-average grant date fair value of RSUs granted in the years ended December 31, 2023, 2022 and 2021 was $228.33, $239.85 and $261.33, respectively. The aggregate release date fair value of RSUs in the years ended December 31, 2023, 2022 and 2021 was $2.50 billion, $4.32 billion and $5.70 billion, respectively.

The aggregate intrinsic value of options exercised in the years ended December 31, 2023, 2022, and 2021 was $1.33 billion, $1.90 billion and $26.88 billion, respectively. During the year ended December 31, 2021, our CEO exercised all of the remaining vested options from the 2012 CEO Performance Award, which amounted to an intrinsic value of $23.45 billion.

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, 2023, 2022 and 2021, under the ESPP we issued 2.1 million, 1.4 million and 1.5 million shares, respectively. As of December 31, 2023, there were 97.8 million shares available for issuance under the ESPP.

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,		
	2023	2022	2021
Risk-free interest rate	3.90 %	3.11 %	0.66 %
Expected term (in years)	4.5	4.1	4.3
Expected volatility	63 %	63 %	59 %
Dividend yield	0.0 %	0.0 %	0.0 %
Grant date fair value per share	$ 121.62	$ 114.51	$ 128.02

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 304.0 million stock option awards, as adjusted to give effect to the 2020 Stock Split and the 2022 Stock Split, to our CEO (the "2018 CEO Performance Award"). The 2018 CEO Performance Award consisted 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 vested upon certification by the Board of Directors that both (i) the market capitalization milestone for such tranche, which began 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), had 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 had been achieved for the four consecutive fiscal quarters on an annualized basis and subsequently reported by us in our consolidated financial statements filed with our Forms 10-Q and/or 10-K. Adjusted EBITDA was 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 $23.34 per share as adjusted to give effect to the 2020 Stock Split and the 2022 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, 2023 is provided below.

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

Stock-based compensation under the 2018 CEO Performance Award represented a non-cash expense and was recorded as a Selling, general, and administrative operating expense in our consolidated statements of operations. In each quarter since the grant of the 2018 CEO Performance Award, we had recognized expense, generally on a pro-rated basis, for only the number of tranches (up to the maximum of 12 tranches) that corresponded to the number of operational milestones that had been achieved or had 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 determined whether it was probable that we would achieve each operational milestone that had not previously been achieved or deemed probable of achievement and if so, the future time when we expected to achieve that operational milestone, or its "expected operational milestone achievement time."

As of December 31, 2022, all remaining unrecognized stock-based compensation expense under the 2018 CEO Performance Award had been recognized. For the years ended December 31, 2022 and 2021, we recorded stock-based compensation expense of $66 million and $910 million, respectively, related to the 2018 CEO Performance Award.

Other Performance-Based Grants

From time to time, the Compensation Committee of our Board of Directors grants certain employees performance-based RSUs and stock options.

As of December 31, 2023, we had unrecognized stock-based compensation expense of $655 million under these grants to purchase or receive an aggregate 5.3 million shares of our common stock. For awards probable of achievement, we estimate the unrecognized stock-based compensation expense of $110 million will be recognized over a weighted-average period of 4.0 years.

For the years ended December 31, 2023 and 2022, we recorded $57 million and $159 million, respectively, of stock-based compensation expense related to these grants, net of forfeitures.

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,		
	2023	2022	2021
Cost of revenues	$ 741	$ 594	$ 421
Research and development	689	536	448
Selling, general and administrative	382	430	1,252
Total	$ 1,812	$ 1,560	$ 2,121

Our income tax benefits recognized from stock-based compensation arrangements were immaterial while we were under full valuation allowances on our U.S. deferred tax assets during the years ended December 31, 2022 and 2021. With the release of the valuation allowance associated with our federal and certain state deferred tax assets in 2023, income tax benefits recognized from stock-based compensation expense were $326 million during the year ended December 31, 2023. During the years ended December 31, 2023, 2022 and 2021, stock-based compensation expense capitalized to our consolidated balance sheets was $199 million, $245 million and $182 million, respectively. As of December 31, 2023, we had $4.82 billion of total unrecognized stock-based compensation expense related to non-performance awards, which will be recognized over a weighted-average period of 2.8 years.

Note 14 – Income Taxes

Our income before (benefit from) provision for income taxes for the years ended December 31, 2023, 2022 and 2021 was as follows (in millions):

	Year Ended December 31,		
	2023	2022	2021
Domestic	$ 3,196	$ 5,524	$ (130)
Noncontrolling interest and redeemable noncontrolling interest	(23)	31	125
Foreign	6,800	8,164	6,348
Income before income taxes	$ 9,973	$ 13,719	$ 6,343

A (benefit from) provision for income taxes of $(5.00) billion, $1.13 billion and $699 million has been recognized for the years ended December 31, 2023, 2022 and 2021, respectively. The components of the (benefit from) provision for income taxes for the years ended December 31, 2023, 2022 and 2021 consisted of the following (in millions):

	Year Ended December 31,		
	2023	2022	2021
Current:			
Federal	$ 48	$ —	$ —
State	57	62	9
Foreign	1,243	1,266	839
Total current	1,348	1,328	848
Deferred:			
Federal	(5,246)	26	—
State	(653)	1	—
Foreign	(450)	(223)	(149)
Total deferred	(6,349)	(196)	(149)
Total (Benefit from) provision for income taxes	$ (5,001)	$ 1,132	$ 699

The reconciliation of taxes at the federal statutory rate to our (benefit from) provision for income taxes for the years ended December 31, 2023, 2022 and 2021 was as follows (in millions):

	Year Ended December 31,		
	2023	2022	2021
Tax at statutory federal rate	$ 2,094	$ 2,881	$ 1,332
State tax, net of federal benefit	(372)	51	6
Nondeductible executive compensation	23	14	201
Excess tax benefits related to stock-based compensation	(288)	(745)	(7,123)
Nontaxable manufacturing credit	(101)	—	—
Foreign income rate differential	(816)	(923)	(668)
U.S. tax credits	(593)	(276)	(328)
GILTI inclusion	670	1,279	1,008
Unrecognized tax benefits	183	252	28
Change in valuation allowance	(5,962)	(1,532)	6,165
Other	161	131	78
(Benefit from) provision for income taxes	$ (5,001)	$ 1,132	$ 699

We monitor the realizability of our deferred tax assets taking into account all relevant factors at each reporting period. As of December 31, 2023, based on the relevant weight of positive and negative evidence, including the amount of our taxable income in recent years which is objective and verifiable, and consideration of our expected future taxable earnings, we concluded that it is more likely than not that our U.S. federal and certain state deferred tax assets are realizable. As such, we released $6.54 billion of our valuation allowance associated with the U.S. federal and state deferred tax assets, with the exception of our California deferred tax assets. We continue to maintain a full valuation allowance against our California deferred tax assets as of December 31, 2023, because we concluded they are not more likely than not to be realized as we expect our California deferred tax assets generation in future years to exceed our ability to use these deferred tax assets.

Deferred tax assets (liabilities) as of December 31, 2023 and 2022 consisted of the following (in millions):

	December 31, 2023	December 31, 2022
Deferred tax assets:		
Net operating loss carry-forwards	$ 2,826	$ 4,486
Research and development credits	1,358	1,184
Other tax credits and attributes	827	217
Deferred revenue	1,035	751
Inventory and warranty reserves	1,258	819
Stock-based compensation	230	185
Operating lease right-of-use liabilities	930	554
Capitalized research and development costs	1,344	693
Deferred GILTI tax assets	760	466
Accruals and others	206	178
Total deferred tax assets	10,774	9,533
Valuation allowance	(892)	(7,349)
Deferred tax assets, net of valuation allowance	9,882	2,184
Deferred tax liabilities:		
Depreciation and amortization	(2,122)	(1,178)
Investment in certain financing funds	(133)	(238)
Operating lease right-of-use assets	(859)	(506)
Other	(116)	(15)
Total deferred tax liabilities	(3,230)	(1,937)
Deferred tax assets (liabilities), net of valuation allowance	$ 6,652	$ 247

As of December 31, 2023, we maintained valuation allowances of $892 million for deferred tax assets that are not more likely than not to be realized, which primarily included deferred tax assets in the state of California and certain foreign operating losses. The valuation allowance on our net deferred tax assets decreased by $6.46 billion and $1.73 billion during the years ended December 31, 2023 and 2022, respectively, and increased by $6.14 billion during the year ended December 31, 2021. The valuation allowance decrease during the year ended December 31, 2023 was primarily due to the release of our valuation allowance with respect to our U.S. federal and certain state deferred tax assets. The changes in valuation allowances during the years ended December 31, 2022 and 2021 were primarily due to changes in our U.S. deferred tax assets and liabilities in the respective year. Among our deferred tax assets in foreign jurisdictions, we recorded a valuation allowance on certain foreign net operating losses that are not more likely than not to be realized. The remainder of our foreign deferred tax assets are more likely than not to be realized given the expectation of future earnings in these jurisdictions.

As of December 31, 2023, we had $10.31 billion of federal and $10.36 billion of state net operating loss carry-forwards available to offset future taxable income, some of which, if not utilized, will begin to expire in 2024 for federal and state purposes. 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 or expirations.

As of December 31, 2023, we had federal research and development tax credits of $1.10 billion, federal renewable energy tax credits of $605 million, and state research and development tax credits of $923 million. Most of our state research and development tax credits were in the state of California. If not utilized, some of the federal tax credits may expire in various amounts beginning in 2036. However, California research and development tax credits can be carried forward indefinitely.

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. Starting in 2024, Gigafactory Shanghai is subject to 25% statutory corporate income tax rate in China.

As of December 31, 2023, we intend to indefinitely reinvest our foreign earnings and cash unless such repatriation results in no or minimal tax costs. We have recorded the taxes associated with the foreign earnings we intend to repatriate in the future. For the earnings we intend to indefinitely reinvest, no deferred tax liabilities for foreign withholding or other taxes have been recorded. The estimated amount of such unrecognized withholding tax liability associated with the indefinitely reinvested earnings is approximately $245 million.

Uncertain Tax Positions

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

December 31, 2020	$	380
Increases in balances related to prior year tax positions		117
Decreases in balances related to prior year tax positions		(90)
Increases in balances related to current year tax positions		124
December 31, 2021		531
Increases in balances related to prior year tax positions		136
Decreases in balances related to prior year tax positions		(12)
Increases in balances related to current year tax positions		222
Decreases in balances related to expiration of the statute of limitations		(7)
December 31, 2022		870
Increases in balances related to prior year tax positions		59
Decreases related to settlement with tax authorities		(6)
Increases in balances related to current year tax positions		255
Decreases in balances related to expiration of the statute of limitations		(4)
December 31, 2023	$	1,174

We include interest and penalties related to unrecognized tax benefits in income tax expense. We recognized net interest and penalties related to unrecognized tax benefits in provision for income taxes line of our consolidated statements of operations of $17 million, $27 million and $4 million for the years ended December 31, 2023, 2022 and 2021, respectively. As of December 31, 2023, and 2022, we have accrued $47 million and $31 million, respectively, related to interest and penalties on our unrecognized tax benefits. Unrecognized tax benefits of $901 million, if recognized, would affect our effective tax rate.

We file income tax returns in the U.S. and various state and foreign jurisdictions. We are currently under examination by the Internal Revenue Service ("IRS") for the years 2015 to 2018. Additional tax years within the periods 2004 to 2014 and 2019 to 2022 remain subject to examination for federal income tax purposes. All net operating losses and tax credits generated to date are subject to adjustment for U.S. federal and state income tax purposes. Our returns for 2004 and subsequent tax years remain subject to examination in U.S. state and foreign jurisdictions.

Given the uncertainty in timing and outcome of our tax examinations, an estimate of the range of the reasonably possible change in gross unrecognized tax benefits within twelve months cannot be made at this time.

Note 15 – Commitments and Contingencies

Operating Lease Arrangement in Buffalo, New York

We have an operating lease arrangement through the Research Foundation for the SUNY Foundation with respect to Gigafactory New York. Under the lease and a related research and development agreement, we are continuing to further develop the facility.

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.

In 2021, an amendment was executed to extend our overall agreement to spend or incur $5.00 billion in combined capital, operational expenses, costs of goods sold and other costs in the State of New York through December 31, 2029. On February 1, 2022, we reported to the State of New York that we had met and exceeded our annual requirements for jobs and investment in Buffalo and New York State. As of December 31, 2023, we have met and expect to meet the requirements under this arrangement based on our current and anticipated level of operations. However, if our expectations as to the costs and timelines of our investment and operations at Buffalo prove incorrect, we may incur additional expenses or be required to make 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 have been constructing Gigafactory Shanghai. Under the terms of the arrangement, we are required to spend RMB 14.08 billion in capital expenditures by the end of 2023, which has been achieved in 2023, and to generate RMB 2.23 billion of annual tax revenues starting at the end of 2023. As of December 31, 2023, we have met and expect to meet the tax revenue requirements based on our current level of spend and sales.

Legal Proceedings

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 awarded to Elon Musk in 2018. Trial was held November 14-18, 2022. Post-trial briefing and argument are now complete.

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.

On July 14, 2023, the parties filed a Stipulation and Agreement of Compromise and Settlement, which does not involve an admission of any wrongdoing by any party. If the settlement is approved by the Court, this action will be fully settled and dismissed with prejudice. Pursuant to the terms of the agreement, Tesla provided notice of the proposed settlement to stockholders of record as of July 14, 2023. The Court held a hearing regarding the settlement on October 13, 2023, after which it took the settlement and plaintiff counsels’ fee request under advisement. The settlement is not expected to have an adverse impact on our results of operations, cash flows or financial position.

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. On January 16, 2019, Plaintiffs filed their consolidated complaint in the United States District Court for the Northern District of California and added as defendants the members of Tesla’s board of directors. The consolidated complaint asserts claims for violations of the federal securities laws and seeks unspecified damages and other relief. The parties stipulated to certification of a class of stockholders, which the court granted on November 25, 2020. Trial started on January 17, 2023, and on February 3, 2023, a jury rendered a verdict in favor of the defendants on all counts. After trial, plaintiffs filed a motion for judgment as a matter of law and a motion for new trial, which the Court denied and judgement was entered in favor of defendants on July 11, 2023. On July 14, 2023, plaintiffs filed a notice of appeal.

Between October 17, 2018 and March 8, 2021, seven derivative lawsuits were filed in the Delaware Court of Chancery, purportedly on behalf of Tesla, against Mr. Musk and the members of Tesla's board of directors, as constituted at relevant times, in relation to statements made and actions connected to a potential going private transaction, with certain of the lawsuits challenging additional Twitter posts by Mr. Musk, among other things. Five of those actions were consolidated, and all seven actions have been stayed pending resolution of the appeal in the above-referenced consolidated purported stockholder class action. In addition to these cases, two derivative lawsuits were filed on October 25, 2018 and February 11, 2019 in the U.S. District Court for the District of Delaware, purportedly on behalf of Tesla, against Mr. Musk and the members of the Tesla board of directors as then constituted. Those cases have also been consolidated and stayed pending resolution of the appeal in the above-referenced consolidated purported stockholder class action.

On October 21, 2022, a lawsuit was filed in the Delaware Court of Chancery by a purported shareholder of Tesla alleging, among other things, that board members breached their fiduciary duties in connection with their oversight of the Company's 2018 settlement with the SEC, as amended. Among other things, the plaintiff seeks reforms to the Company's corporate governance and internal procedures, unspecified damages, and attorneys' fees. The parties reached an agreement to stay the case until March 5, 2024.

On November 15, 2021, JPMorgan Chase Bank ("JP Morgan") filed a lawsuit against Tesla in the Southern District of New York alleging breach of a stock warrant agreement that was entered into as part of a convertible notes offering in 2014. In 2018, JP Morgan informed Tesla that it had adjusted the strike price based upon Mr. Musk's August 7, 2018 Twitter post that he was considering taking Tesla private. Tesla disputed JP Morgan's adjustment as a violation of the parties' agreement. In 2021, Tesla delivered shares to JP Morgan per the agreement, which they duly accepted. JP Morgan now alleges that it is owed approximately $162 million as the value of additional shares that it claims should have been delivered as a result of the adjustment to the strike price in 2018. On January 24, 2022, Tesla filed multiple counterclaims as part of its answer to the underlying lawsuit, asserting among other points that JP Morgan should have terminated the stock warrant agreement in 2018 rather than make an adjustment to the strike price that it should have known would lead to a commercially unreasonable result. Tesla believes that the adjustments made by JP Morgan were neither proper nor commercially reasonable, as required under the stock warrant agreements. JP Morgan filed a motion for judgment on the pleadings, which Tesla opposed, and that motion is currently pending before the Court.

Litigation and Investigations Relating to Alleged Discrimination and Harassment

On October 4, 2021, in a case captioned Diaz v. Tesla, a jury in the Northern District of California returned a verdict against Tesla on claims by a former contingent worker that he was subjected to race discrimination while assigned to work at Tesla's Fremont Factory from 2015-2016. A retrial was held starting on March 27, 2023, after which a jury returned a verdict of $3,175,000. As a result, the damages awarded against Tesla were reduced from an initial $136.9 million (October 4, 2021) down to $15 million (April 13, 2022), and then further down to $3.175 million (April 3, 2023). On November 2, 2023, the plaintiff filed a notice of appeal, and on November 16, 2023, Tesla filed a notice of cross appeal.

On February 9, 2022, shortly after the first Diaz jury verdict, the California Civil Rights Department ("CRD," formerly "DFEH") filed a civil complaint against Tesla in Alameda County, California Superior Court, alleging systemic race discrimination, hostile work environment and pay equity claims, among others. CRD's amended complaint seeks monetary damages and injunctive relief. On September 22, 2022, Tesla filed a cross complaint against CRD, alleging that it violated the Administrative Procedures Act by failing to follow statutory pre-requisites prior to filing suit and that cross complaint was subject to a sustained demurrer, which Tesla later amended and refiled. The case is currently in discovery.

Additionally, on June 1, 2022 the Equal Employment Opportunity Commission ("EEOC") issued a cause finding against Tesla that closely parallels the CRD's allegations. On September 28, 2023, the EEOC filed a civil complaint against Tesla in the United States District Court for the Northern District of California asserting claims for race harassment and retaliation and seeking, among other things, monetary and injunctive relief. On December 18, 2023, Tesla filed a motion to stay the case. Separately, on December 26, 2023, Tesla filed a motion to dismiss the case.

On June 16, 2022, two Tesla stockholders filed separate derivative actions in the U.S. District Court for the Western District of Texas, purportedly on behalf of Tesla, against certain of Tesla's current and former directors. Both suits assert claims for breach of fiduciary duty, unjust enrichment, and violation of the federal securities laws in connection with alleged race and gender discrimination and sexual harassment. Among other things, plaintiffs seek declaratory and injunctive relief, unspecified damages payable to Tesla, and attorneys' fees. On July 22, 2022, the Court consolidated the two cases and on September 6, 2022, plaintiffs filed a consolidated complaint. On November 7, 2022, the defendants filed a motion to dismiss the case and on September 15, 2023, the Court dismissed the action but granted plaintiffs leave to file an amended complaint. On November 2, 2023, plaintiff filed an amended complaint purportedly on behalf of Tesla, against Elon Musk. On December 19, 2023, the defendants moved to dismiss the amended complaint.

Other Litigation Related to Our Products and Services

We are also subject to various lawsuits that seek monetary and other injunctive relief. These lawsuits include proposed class actions and other consumer claims that allege, among other things, purported defects and misrepresentations related to our products and services. For example, on September 14, 2022, a proposed class action was filed against Tesla, Inc. and related entities in the U.S. District Court for the Northern District of California, alleging various claims about the Company's driver assistance technology systems under state and federal law. This case was later consolidated with several other proposed class actions, and a Consolidated Amended Complaint was filed on October 28, 2022, which seeks damages and other relief on behalf of all persons who purchased or leased from Tesla between January 1, 2016 to the present. On October 5, 2022 a proposed class action complaint was filed in the U.S. District Court for the Eastern District of New York asserting similar state and federal law claims against the same defendants. On September 30, 2023, the Court dismissed this action with leave to amend the complaint. On November 20, 2023, the plaintiff moved to amend the complaint, which Tesla opposed. On March 22, 2023, the plaintiffs in the Northern District of California consolidated action filed a motion for a preliminary injunction to order Tesla to (1) cease using the term "Full Self-Driving Capability" (FSD Capability), (2) cease the sale and activation of FSD Capability and deactivate FSD Capability on Tesla vehicles, and (3) provide certain notices to consumers about proposed court-findings about the accuracy of the use of the terms Autopilot and FSD Capability. Tesla opposed the motion. On September 30, 2023, the Court denied the request for a preliminary injunction, compelled four of five plaintiffs to arbitration, and dismissed the claims of the fifth plaintiff with leave to amend the complaint. On October 31, 2023, the remaining plaintiff in the Northern District of California action filed an amended complaint, which Tesla has moved to dismiss. On October 2, 2023, a similar proposed class action was filed in San Diego County Superior Court in California. Tesla subsequently removed the San Diego County case to federal court and on January 8, 2024, the federal court granted Tesla's motion to transfer the case to the U.S. District Court for the Northern District of California.

On February 27, 2023, a proposed class action was filed in the U.S. District Court for the Northern District of California against Tesla, Inc., Elon Musk and certain current and former Company executives. The complaint alleges that the defendants made material misrepresentations and omissions about the Company's Autopilot and FSD Capability technologies and seeks money damages and other relief on behalf of persons who purchased Tesla stock between February 19, 2019 and February 17, 2023. An amended complaint was filed on September 5, 2023, naming only Tesla, Inc. and Elon Musk as defendants. On November 6, 2023, Tesla moved to dismiss the amended complaint.

On March 14, 2023, a proposed class action was filed against Tesla, Inc. in the U.S. District Court for the Northern District of California. Several similar complaints have also been filed in the same court and these cases have now all been consolidated. These complaints allege that Tesla violates federal antitrust and warranty laws through its repair, service, and maintenance practices and seeks, among other relief, damages for persons who paid Tesla for repairs services or Tesla compatible replacement parts from March 2019 to March 2023. On July 17, 2023, these plaintiffs filed a consolidated amended complaint. On September 27, 2023, the court granted Tesla's motion to compel arbitration as to three of the plaintiffs, and on November 17, 2023, the court granted Tesla's motion to dismiss without prejudice. The plaintiffs filed a Consolidated Second Amended Complaint on December 12, 2023, which Tesla has moved to dismiss. Plaintiffs have also appealed the court's arbitration order. Trial is currently set for July 7, 2025.

The Company intends to vigorously defend itself in these matters; however, we cannot predict the outcome or impact. We are unable to reasonably estimate the possible loss or range of loss, if any, associated with these claims, unless noted.

Certain Investigations and Other Matters

We regularly receive requests for information, including subpoenas, from regulators and governmental authorities such as the National Highway Traffic Safety Administration, the National Transportation Safety Board, the Securities and Exchange Commission ("SEC"), the Department of Justice ("DOJ"), and various local, state, federal, and international agencies. The ongoing requests for information include topics such as operations, technology (e.g., vehicle functionality, Autopilot and FSD Capability), compliance, finance, data privacy, and other matters related to Tesla's business, its personnel, and related parties. We routinely cooperate with such formal and informal requests for information, investigations, and other inquiries. To our knowledge no government agency in any ongoing investigation has concluded that any wrongdoing occurred. 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, financial position or brand.

We are also subject to various other legal proceedings, risks and claims that arise from the normal course of business activities. For example, during the second quarter of 2023, a foreign news outlet reported that it obtained certain misappropriated data including, purportedly non-public Tesla business and personal information. Tesla has made notifications to potentially affected individuals (current and former employees) and regulatory authorities and we are working with certain law enforcement and other authorities. On August 5, 2023, a putative class action was filed in the United States District Court for the Northern District of California, purportedly on behalf of all U.S. individuals impacted by the data incident, followed by several additional lawsuits, that each assert claims under various state laws and seeks monetary damages and other relief. If an unfavorable ruling or development were to occur in these or other possible legal proceedings, risks and claims, there exists the possibility of a material adverse impact on our business, results of operations, prospects, cash flows, financial position or brand.

Letters of Credit

As of December 31, 2023, we had $525 million of unused letters of credit outstanding.

Note 16 – 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 VIEs and we are the primary beneficiary of these VIEs by reference to the power and benefits criterion under ASC 810. 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 and the associated customer contracts to be sold or contributed to these VIEs, redeploying solar energy systems 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. Certain assets of the funds have 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, 2023	December 31, 2022
Assets		
Current assets		
Cash and cash equivalents	$ 66	$ 68
Accounts receivable, net	13	22
Prepaid expenses and other current assets	361	274
Total current assets	440	364
Solar energy systems, net	3,278	4,060
Other non-current assets	369	404
Total assets	$ 4,087	$ 4,828
Liabilities		
Current liabilities		
Accrued liabilities and other	$ 67	$ 69
Deferred revenue	6	10
Current portion of debt and finance leases	1,564	1,013
Total current liabilities	1,637	1,092
Deferred revenue, net of current portion	99	149
Debt and finance leases, net of current portion	2,041	971
Other long-term liabilities	—	3
Total liabilities	$ 3,777	$ 2,215

Note 17 – Related Party Transactions

In relation to our CEO's exercise of stock options and sale of common stock from the 2012 CEO Performance Award, Tesla withheld the appropriate amount of taxes. However, given the significant amounts involved, our CEO entered into an indemnification agreement with us in November 2021 for additional taxes owed, if any.

Tesla periodically does business with certain entities with which its CEO and directors are affiliated, such as SpaceX and X Corp., in accordance with our Related Person Transactions Policy. Such transactions have not had to date, and are not currently expected to have, a material impact on our consolidated financial statements.

Note 18 – 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 sales of used vehicles, non-warranty after-sales vehicle services, body shop and parts, paid Supercharging, vehicle insurance revenue and retail merchandise. 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,		
	2023	2022	2021
Automotive segment			
Revenues	$ 90,738	$ 77,553	$ 51,034
Gross profit	$ 16,519	$ 20,565	$ 13,735
Energy generation and storage segment			
Revenues	$ 6,035	$ 3,909	$ 2,789
Gross profit	$ 1,141	$ 288	$ (129)

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

	Year Ended December 31,		
	2023	2022	2021
United States	$ 45,235	$ 40,553	$ 23,973
China	21,745	18,145	13,844
Other international	29,793	22,764	16,006
Total	$ 96,773	$ 81,462	$ 53,823

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

	December 31, 2023	December 31, 2022
United States	$ 26,629	$ 21,667
Germany	4,258	3,547
China	2,820	2,978
Other international	1,247	845
Total	$ 34,954	$ 29,037

The following table presents inventory by reportable segment (in millions):

	December 31, 2023	December 31, 2022
Automotive	$ 11,139	$ 10,996
Energy generation and storage	2,487	1,843
Total	$ 13,626	$ 12,839

Note 19 – Restructuring and Other

During the years ended December 31, 2022 and 2021, we recorded $204 million and $101 million, respectively, of impairment losses on digital assets. During the years ended December 31, 2022 and 2021 we also realized gains of $64 million and $128 million, respectively, in connection with converting our holdings of digital assets into fiat currency. We also recorded other expenses of $36 million during the second quarter of the year ended December 31, 2022, related to employee terminations.

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, 2023, 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 SEC 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, 2023.

Our independent registered public accounting firm, PricewaterhouseCoopers LLP, has audited the effectiveness of our internal control over financial reporting as of December 31, 2023, 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 quarter ended December 31, 2023, which has materially affected, or is reasonably likely to materially affect, our internal control over financial reporting.

ITEM 9B. OTHER INFORMATION

None of the Company’s directors or officers adopted, modified or terminated a Rule 10b5-1 trading arrangement or a non-Rule 10b5-1 trading arrangement during the Company’s fiscal quarter ended December 31, 2023, as such terms are defined under Item 408(a) of Regulation S-K, except as follows:

On October 23, 2023, Robyn Denholm, one of our directors, adopted a Rule 10b5-1 trading arrangement for the potential sale of up to 281,116 shares of our common stock, subject to certain conditions. The trading arrangement covers stock options that expire in August 2024. The arrangement's expiration date is August 16, 2024.

On November 13, 2023, Andrew Baglino, Senior Vice President, Powertrain and Energy Engineering, adopted a Rule 10b5-1 trading arrangement for the potential sale of up to 115,500 shares of our common stock, subject to certain conditions. The arrangement's expiration date is December 31, 2024.

ITEM 9C. DISCLOSURE REGARDING FOREIGN JURISDICTIONS THAT PREVENT INSPECTIONS

Not applicable.

PART III

ITEM 10. DIRECTORS, EXECUTIVE OFFICERS AND CORPORATE GOVERNANCE

The information required by this Item 10 of Form 10-K will be included in our 2024 Proxy Statement to be filed with the Securities and Exchange Commission in connection with the solicitation of proxies for our 2024 Annual Meeting of Stockholders and is incorporated herein by reference. The 2024 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 2024 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 2024 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 2024 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 2024 Proxy Statement and is incorporated herein by reference.