City Council Agenda Report

ITEM NO. 27

DATE: July 20, 2022

FROM: Arminé Chaparyan, City Manager

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SUBJECT: **Provide Direction Regarding a Proposed Master Lease Agreement Between the City of South Pasadena and Enterprise Fleet Management Inc. for Police Department Fleet Transition to Battery Electric Vehicles**

Recommendations

It is recommended that the City Council:

1. Provide direction regarding a Proposed Master Lease Equity Agreement between the City of South Pasadena and Enterprise Fleet Management Inc.;
2. Provide direction regarding appropriation of $304,124 for the leasing of ten (10) new Tesla Model Y and ten (10) Tesla Model 3 vehicles from Enterprise Fleet Management Inc.;
3. Provide direction regarding appropriation of $383,752 for a one-time down payment for twenty (20) vehicles from Enterprise Fleet Management Inc., and a 15% project contingency for unforeseen expenses, including inflationary cost pressures; and
4. Authorize the City Manager to execute all related documents on behalf of the City.

Background

In an effort to reduce costs, improve efficiencies, and ensure the City advances the goals and objectives in the 2020 Climate Action Plan (CAP) and City's General Plan, the Police Department is proposing to transition its current internal combustion engine (ICE) vehicle fleet to battery electric vehicles (BEVs). It is well established that BEVs substantially reduce energy and maintenance costs of fleet operations while simultaneously eliminating Greenhouse Gas (GHG) emissions. Transitioning to an all-BEV fleet now will significantly advance the City towards the primary goal of achieving GHG emissions targets by 2030. This will also help the City potentially reach carbon neutrality by 2045, as detailed in the CAP adopted by the City Council on December 16, 2020. The resulting reduction in GHG related to this program is measurable,

quantifiable, and can be tracked through CAPDash, a web-based dashboard providing transparency by communicating implementation of CAP.

Analysis
The South Pasadena Police Department currently owns and maintains twenty-three (23) Internal Combustion Engine (ICE) vehicles to provide public safety services to the community. The Police Department's aging fleet is used extensively in response to public safety operations and is experiencing increasing maintenance issues, impacting the Department. Below is a snapshot of the age of the existing fleet.

Vehicle Year	Quantity	% of Fleet	Age (Years)	100,000+ Miles
2001	2	9	21	1
2002-2012	8	35	20-10	1
2014-2017	9	39	8-5	2
2019 >	4	17	3 <	

A utility pickup truck is still identified as a need by Police Department staff, but is not included in the proposed replacement, due to the fact that no viable BEV option is currently available for purchase or lease. A needs assessment determined the need to replace twenty (20) vehicles in the Police Department's fleet to provide for safe and efficient operations while mitigating repair, maintenance, and rising fuel costs. If approved, the Police Department will replace twenty-one (21) of the twenty-three (23) vehicles listed in Table A with twenty (20) BEVs identified in Table B.

Table A (Existing Fleet)

Division	Vehicle Make	Vehicle Model	Vehicle Year
Administration	Toyota	Highlander	2015
Administration	Ford	Explorer	2017
Administration	Ford	Fusion	2019
Patrol	Dodge	Charger	2007
Patrol	Ford	Crown Victoria	2011
Patrol	Ford	F250	2001
Patrol	Ford	Explorer	2014
Patrol	Ford	Explorer	2014
Patrol	Ford	Explorer	2014
Patrol	Chevy	Tahoe	2012
Patrol	Ford	Explorer	2014
Patrol	Ford	Explorer	2017
Patrol	Ford	Explorer	2017
Patrol	Ford	Explorer	2017
Patrol	Dodge	Charger	2019
Patrol	Ford	Explorer	2019
Patrol	Ford	Explorer	2021

Detectives	Ford	Crown Victoria	2002
Detectives	Ford	Crown Victoria	2002
Detectives	Ford	Crown Victoria	2003
Detectives	Ford	Crown Victoria	2005
Detectives	Ford	Crown Victoria	2011
Pool	Ford	Crown Victoria	2001

Table B (Proposed Replacement Fleet)

No. of Vehicles	Vehicle Make	Vehicle Model	Vehicle Year	Division
10	Tesla	Model Y	2022	Patrol
5	Tesla	Model 3	2022	Detectives
4	Tesla	Model 3	2022	Administration
1	Tesla	Model 3	2022	Pool

Police Department staff has conducted over three years of extensive research and due diligence into BEVs, manufacturers, and related technology. Staff's research focused on several areas identified as crucial to the needs of the Department and to the long-term success of a BEV fleet, which include, but are not limited:

- Safety (organizational safety ratings and advanced safety features)
- Reliability
- Total Cost of Ownership
- BEV Product Maturity
- Maintenance
- Energy Expense
- Charging
- Technology
- Environmental Impact Over the Entire Vehicle Lifecycle
    - Manufacturing Phase
    - Use Phase
    - End-of-Life Phase
- Realizing City Climate Goals
- Related Health Benefits

The Department's research identified Tesla, Inc. as the clear market-leading BEV manufacturer that meets or exceeds Department needs in the areas listed above. The Police Department anticipates returning to the City Council within the next 12-18 months with a BEV utility truck option for lease consideration through Enterprise Fleet Management, Inc. (EFM), should BEV manufacturers bring to market a utility pickup truck at a reasonable price through scaled production.

Police Department staff also conducted comparison research to identify other law enforcement agencies where Tesla BEVs are currently deployed. Staff has identified 30 law enforcement agencies across the United States that have integrated Tesla BEVs into their fleet over the past nine months.

The agency with the most comprehensive research and similar needs to the South Pasadena Police Department is the Fremont Police Department in Northern California. The Fremont Police Department conducted a lifecycle comparison study of 90,000 miles over 5 years (Attachment 1) between a gas Ford Police Pursuit Vehicle (PPV) and a 2014 Tesla Model S85 pilot vehicle. According to their study, the Fremont PD is expected to realize a $27,977 savings in energy/fuel costs, $11,677 savings in maintenance costs and 100% reduction or 210,994 lbs of CO2 per vehicle over a five-year period based upon data compiled during their one-year pilot study. With a recent City purchase of gasoline at $5.37 per gallon compared with $3.00 per gallon in the Fremont PD study, the South Pasadena Police Department is anticipating energy cost savings approximately 79% higher than those realized by Fremont PD. Staff expects maintenance costs and GHG emissions reduction to be consistent with that projected by Fremont PD.

A comparison matrix detailing vehicle purchase price, energy, and maintenance costs between a Tesla Model Y and Ford Police Patrol Vehicle (currently in our fleet) can be found in Table C:

Table C

Factors	2022 Tesla Model Y	Gas Ford PPV
Vehicle Cost	$62,990	$44,850
OEM Range (EPA)	330 miles (74kWh battery)	344 miles (18.6 gal tank capacity)
Cost of Energy	$.10 kWh average	$5.37 per gal
Cost for Capacity Fill	$7.40	$99.88
Annual Energy/Fuel Expense (15,000 mi. per year)	$336	$4,355
Est. Annual Maintenance/Repair Cost	$846	$1,653
Avg. Annual CO2 Emissions	0 lbs.	42,198 lbs.

Based on staff's research, the cost to operate a gas Ford Police Pursuit Vehicle is approximately $0.40 per mile. In comparison, the projected cost per mile to operate a Tesla Model Y is approximately $0.10.

Tesla BEV products have matured to the point where they now meet or exceed the operational needs of the Police Department. Staff is proposing to transition the Police Department's entire fleet to Tesla BEVs pursuant to the adopted 2020 CAP through a vehicle-leasing program. The Tesla Model Y (Attachment 2) would be recommended for Police Department patrol operations and the Model 3 would be recommended for administrative and Detective use.

Upon approval of the agreement, vehicles will be ordered with an estimated delivery time of 6-12 months, depending on the model. Estimated up-fitting time for Police Vehicles would be an additional 2-3 months.

Environmental Impact

According to the United States Environmental Protection Agency (EPA), each gallon of gasoline burned produces 8,887 grams or 19.6 pounds of CO_2[1]. On an annual basis, a gas-powered Ford Patrol Vehicle (FPV) is responsible for producing approximately 42,198 pounds, or 19.14 metric tons, of CO_2 emissions (Attachment 2). Using these calculations, current administrative vehicles in the Police Department fleet produce approximately 4.6 metric tons of CO_2 emissions annually.

Staff's proposal includes a reduction of the Police Department fleet from the current twenty-three (23) vehicles to twenty (20) BEVs, while possibly retaining one of the newer ICE vehicles as backup for emergency use. This would lead to a projected reduction of approximately 1,850 metric tons of CO_2 by 2030. These 1,850 metric tons of CO_2 represent 10% of the City's overall 2030 GHG emissions reduction target of 18,578 metric tons of CO_2e to meet state goals (Attachment 3). The M.2 Play GHG Emissions Reduction Contribution as detailed in the CAP through the electrification of the municipal fleet and mobile equipment is 23 metric tons by 2030. If implemented as proposed, the conversion of the Police Department fleet to BEVs is estimated to exceed the CAP's M.2 GHG emissions reduction goal by 1,827 metric tons by 2030.

Leasing

Police Department staff has been working with Enterprise Fleet Management Inc. (EFM) through the Sourcewell cooperative purchasing program to determine the viability of the City entering into a vehicle lease program. Sourcewell is a national program whose memberships include government and other entities in a number of states, including California. This cooperative purchasing program enables member entities to purchase on an "as needed" basis from competitively awarded contracts with high-performance vendors. EFM has secured a contract (Attachment 6) with Sourcewell through a competitive process for fleet leasing and management services under Sourcewell Contract No. 060618-EFM.

[1] https://www.epa.gov/greenvehicles/greenhouse-gas-emissions-typical-passenger-vehicle

Police Department staff seeks direction regarding the implementation of a BEV fleet transition commensurate with the scale of the charging infrastructure required to support it. At this time, based upon the scope of the proposed charging infrastructure project by the Public Works Department, a transition to an all-BEV fleet is viable. An all-BEV fleet transition will require the procurement of twenty (20) replacement vehicles through the EFM Master Lease Equity Agreement. Advantages of using a vehicle leasing program include, but are not limited to, the following:

- Maximizes cash flow opportunities by creating an on-going consistent annual payment for fleet vehicles as opposed to funding the entire cost of vehicles up front
- Increases employee safety by enabling the City to replace outdated vehicles sooner, consistent with vehicle replacement industry standards
- Significantly reduces vehicle preventative maintenance and fuel/energy expenses by converting immediately and entirely to an all-electric fleet

Fleet lease cycles for most vehicles are typically sixty (60) months. Using this bid to establish a vehicle lease program with EFM will provide a consistent annual lease payment and substantially reduce or eliminate preventative maintenance expenses and related downtime.

The proposed lease for these vehicles will be an “Open Ended (Equity) Lease”. At the end of the lease cycle, the City will have the option to continue to lease the vehicles (a $400 service charge will be due at the end of the sixty (60) month lease per vehicle), or exchange the equity in the vehicle(s) for a new replacement in a renewed lease, likely at a lower cost due to equity transfer. EFM does not offer a maintenance program for BEVs, as there is no preventative maintenance required for the proposed all-electric vehicles. The Police Department intends to maintain a greatly reduced vehicle maintenance budget to provide for traffic collision repair and consumables such as tires, windshield wiper fluid, and brakes.

Based on the EFM quote, the total annual cost to lease the twenty (20) vehicles referenced above will be $304,124 per year (Attachment 7). Over a 10-year period, cost savings is estimated to be $564,426, or an approximate average sustainable savings of $56,443 per year. Vehicle leasing costs will be budgeted annually on an ongoing basis from the appropriate fund(s). The City’s current insurance will cover the leased vehicle at no additional cost.

Why Tesla?

Safety, reliability, and performance are critical elements of successful public safety fleet operations. Legacy ICE automakers have been plagued by recent significant recalls and performance issues by General Motors and Ford related to the Chevy Bolt and Mach-e, respectively. These automakers have struggled in the transition to the

manufacture of all-electric vehicles at scale and have yet to demonstrate mature, reliable products in the BEV space. As a result of staff's extensive research of all-electric product offerings from existing legacy auto manufacturers, which include the Ford Mach-e, Volkswagen ID.4, Hyundai Ioniq 5, and the KIA EV 6, none were found to be immediately suitable for the Police Department's needs.

As an organization, Tesla was built to address the negative impacts of climate change. Founded in 2003, Tesla's mission is to "accelerate the world's transition to sustainable energy." Over the course of the next 19 years, Tesla has evolved and emerged as the all-electric EV market leader with the safest, most mature products with advanced technology. Tesla's corporate philosophy aligns closely with the City's CAP and related goals.

In addition to the local benefits of this proposed adoption, it is also important to Police Department staff that a transition to BEVs results in meaningful, positive environmental impact at the national, and potentially global level. In March 2022, Tesla released their latest 2021 Impact Report (Attachment 4). The Impact Report comprehensively addresses Tesla's global environmental impact from supply chain, through manufacturing, vehicle use, and vehicle end-of-life. The report demonstrated how Tesla is leading the EV automobile industry in minimizing negative climate and social impacts across the entire EV lifecycle.

Charging Infrastructure

Sufficient charging infrastructure to support an all-BEV fleet is a critical component to the success of this program and would serve as a significant step towards the long-term goal of a sustainable, carbon-neutral energy future. Working in partnership with Southern California Edison (SCE) and the City's Public Works and Fire Departments, City staff has re-imagined the fleet parking lot areas to support the installation of chargers, solar panels and battery storage. The results and recommendations from these efforts will be brought before the City Council in a separate but complementary capital improvement project, and will require a significant investment as detailed in the CAP.

Charging infrastructure redundancy is also an important consideration for public safety entities in the event of power grid disruptions. Tesla has built a growing network of Superchargers to support the charging needs of their products. With more than 35,000 Superchargers, Tesla owns and operates the largest global fast-charging network in the world with reported 99.96% uptime as detailed in the 2021 Tesla Impact Report (Attachment 4). The recently constructed and publicly available twenty (20) stall Tesla Supercharger location at Glenarm Street and the Pasadena 110 Freeway helps meet the City's charging infrastructure redundancy and supplemental energy needs.

The Glenarm Supercharger site is supplied with electricity from the Pasadena Department of Water & Power, a completely independent provider of electricity. The City of South Pasadena currently sources electricity from Southern California Edison

(SCE), through which the City is a member of the Los Angeles County Clean Power Alliance, which provides 100% clean and renewable energy. Availability of electricity from multiple sources to support the City's BEV charging needs minimizes the risk of concurrent outages. Installation of chargers, solar panels and battery storage at the City Hall complex will further enhance that safety net and put the City on the road to sustainable energy independence for the Police Department's fleet operations. Additionally, there are a number of other Tesla Supercharger locations in and around our region, further mitigating power grid disruption risk.

Alternatives Considered
The City Council may make a finding that it is more appropriate to incrementally implement the transition of the Police Department fleet to BEVs with a corresponding scaled-down investment in charging infrastructure. In doing so, the Police Department would be required to maintain existing gasoline infrastructure in parallel with new charging infrastructure. Additionally, cost savings and climate benefits inherent to BEVs (e.g. maintenance, fuel, eliminated GHG emissions, etc.) would be reduced proportionally to the number of proposed BEVs removed from the proposal. Other options and alternatives for consideration could be:

1. Transition half of the Police Department's fleet to BEVs. A transition of half the fleet to BEVs would result in approximately half of the proposed project expenses; however, would also require maintaining existing ICE infrastructure, in addition to related fuel and maintenance expenses.
2. Purchase an immediate five (5) Ford Police Interceptor Explorer hybrids and a future three (3) on an annual basis as the minimum necessary to maintain a sustainable fleet. The Police Department would require an immediate five vehicles due to the fact that only one vehicle has been purchased over approximately the last three years. The current cost of one vehicle, including Police up-fitting is roughly $63,063.

Fiscal Impact
The total amount of this agreement with EFM over sixty (60) months is $1,904,372, which includes $1,520,620 for vehicle lease financing and a one-time down payment of $383,752. The one-time down payment would become due when the vehicle order is placed. The annual lease payment would become due upon vehicle delivery. All related costs for vehicle up-fitting are included in the annual lease payment.

The annual lease payment of $304,124 will be funded from account #105-4010-4011-8101 Vehicle Lease, with an additional appropriation of $31,124 necessary to cover a balance deficit. The one-time down payment amount of $383,752 is proposed to be funded by an appropriation from undesignated general fund reserves. The annual lease payment and one-time down payment have been offset by the equity in the existing fleet proposed to be surplused through EFM pursuant to the Master Lease Agreement. The estimated value of the surplus vehicles is $139,400.

The current fiscal year 2022-23 budget for the Police Department fleet is $343,000; $143,000 for Vehicle Leases (105-4010-4011-8101), $80,000 for Vehicle Maintenance (101-4010-4011-8100) and $120,000 for Fuel (101-4011-8105).

Commission Review and Recommendation
On December 6 and December 13, 2021 respectively, the Natural Resources and Environmental Commission and the Public Safety Commission reviewed the subject matter. Each Commission made a recommendation to the City Council that the Police Department transition their entire vehicle fleet to BEVs. This recommendation was made in concert with the Commission's consideration of the electric vehicle charging infrastructure necessary to support this transition through the Southern California Edison (SCE) Charge Ready program.

Attachments:
1. Fremont Police Department Electric Patrol Vehicle Pilot Program Outcome Report
2. Fremont Police Department Tesla Model Y Media Kit
3. City of South Pasadena 2020 Climate Action Plan
4. Tesla 2021 Impact Report
5. City of South Pasadena General Plan
6. Enterprise Lease Management Master Lease Agreement
7. Estimated Equity Lease Costs
8. Enterprise Proposals

ATTACHMENT 1

Fremont Police Department Electric Patrol Vehicle Pilot Program Outcome Report

City of Fremont Police Department

Electric Patrol Vehicle Pilot Program

Outcome Report

March 2019 – March 2020

By: Captain Sean Washington

November 19, 2020

Contents

PILOT PROGRAM TIMELINE

- 2015 – Developed pilot program idea in support of the City's policy to identify and implement clean energy technology
- 2016 – Detailed discussions with City Manager, City Attorney, and Chief of Police
- 2017 – City leadership approved the Pilot Program
    - Various City departments formed a planning committee, including: City Manager's Office, City Attorney's Office, Finance, Public Works (Fleet and Building Maintenance), Community Development (Sustainability), and IT Services
    - Extensive research on various vehicle options (Tesla Model S 85 selected)
        - Visit with Los Angeles Police Department / Los Angeles Sheriff's Department who were initiating a similar pilot program
- Late 2017/Early 2018 – Fremont Police Department (FPD) purchases and accepts delivery of a used Tesla Model S 85
    - 12-month customized build/equipment installation
- 2019 – Vehicle build completed
    - Vehicle tested at Alameda County Emergency Vehicle Operations (EVOC) track
        - Exceeded expectations and performance objectives
    - Deployment date set for March 25, 2019
        - Pilot Program initiated
    - Media and law enforcement interest nationally and internationally
        - Multiple media & community presentation requests

PILOT PROGRAM OVERVIEW

- Program assessed the following:
  - Does the technology meet police application?
  - Is the electric vehicle durable enough for police usage?
  - Is the electric vehicle cost effective?
- Modifications to the Tesla Model S 85 included:
  - Overhead light-bar
  - Rear flashers
  - Wheel well lights
  - Headlight flashers
  - WatchGuard vehicle camera
  - Trunk lighting
  - Panasonic Mobile Digital Computer
  - Push-bumper
  - Prisoner partition
  - Prisoner seat
  - Center equipment console
  - Armor door panels for the driver and front passenger door
- Estimated $30,000 in fuel consumed during the life span of conventional police vehicles. As a result, the project was projected to have cost savings or be cost neutral (based on purchase price of test vehicle and anticipated lifespan)
- On-campus Tesla charging station installed
  - Tesla charging station supplemented by existing on-campus electric vehicle charging stations
- Data gathered daily for six to 12 months, including:
  - Electric vehicle's average range during an 11-hour patrol shift
  - Vehicle's performance during emergency response, safety, and comfort
  - Police Officer comments and input from City's department stakeholders were also collected as an added layer of evaluation
- Ongoing media and community interest

- Government agencies throughout the nation contacted City officials for information regarding the Electric Patrol Vehicle Pilot Program
- Vehicle requested for numerous community events, parades, and presentations

OUTCOMES

Methodology

The Electric Patrol Vehicle Pilot Program ran from March 25, 2019 to March 25, 2020. To calculate the annual cost comparisons between the Tesla Model S 85 and the Ford Utility police pursuit vehicle (PPV), various reports were generated to collect data for each vehicle's actual or average annual cost of maintenance, repair, fuel, energy, and downtime for comparison purposes. What follows is a description of the reports and how the data was collected and presented.

The Tesla Model S 85 actual annual energy cost was derived from Geotab's "Advanced Fuel & EV Energy Report," spanning the pilot program period. To calculate energy consumption and miles driven for the Tesla, City of Fremont Fleet Services used Geotab's fleet management software and a GPS vehicle tracking device. The kilowatt-hour (kWh) energy used for miles driven was converted into kWh per mile. Then, that total was multiplied by the Pacific Gas and Electric (PGE) kWh rate of $0.15 to get the energy cost per mile.

The Tesla Model S 85 average annual maintenance and repair costs were derived from 16 months of data and then converted to an average annual cost from the Faster 4150 Report, "Equip History: Cost and Quantity Detail Report." The yearly average maintenance and repair costs for the Tesla were calculated using data from the 16 months the vehicle has been patrolling, including the pilot program period.

The Ford Utility PPV maintenance, repair, and fuel costs were derived from 58 months of data from 10 2015 Ford Utility PPV vehicles and then converted to an average annual cost for comparison purposes.[1] This data was sourced from the Faster 4150 Report, "Equip History: Cost and Quantity Detail Report." The average annual fuel costs for the conventional Ford Utility PPV was determined from the

[1] The 10 2015 Ford Utility PPV vehicles were selected because they were in service the longest, came very close to the five-year life cycle of the Ford Patrols, and would give a closer true cost of maintenance/repair and fuel.

total gallons consumed and multiplied by a three-year average fuel cost of $3.00/gallon.

The Tesla Model S 85 actual downtime, presented in both annual percentage and days, was derived from one year of data spanning March 2019 to March 2020 from the Faster 4309 report, “Downtime-Detail Report.”

The Ford Utility PPV average downtime was derived from the same downtime report spanning three years of data from July 2017 to July 2020. This data was then converted to average annual downtime percentage and days. The downtime data was collected from all PPVs existing at this time, with vehicle models including Chevrolet Tahoe, Chevrolet Caprice, and Ford F150.

The actual and average annual maintenance, repair, energy, fuel, and downtime data for the Tesla Model S 85 and Ford Utility PPV are shown side-by-side for comparison purposes in the chart on page 8.

Outcome Summary

The Pilot Program clearly established that an electric patrol vehicle is a feasible option for our City's police department. The Pilot Program affirmed the following information:

1. Does the technology meet police application?
    - Results: The Tesla Model S 85 exceeded performance and operational objectives.
2. Is the electric vehicle durable enough for police usage?
    - Results: The Tesla Model S 85 withstood the rigors of police use requiring minimal maintenance.
3. Is the electric vehicle cost effective?
    - Results: Although build cost for the Tesla Model S 85 was slightly higher than conventional police vehicles, maintenance/repair and fuel savings appears to balance or slightly reduce the overall operating cost as projected and compared to the lifespan of a police vehicle.

The chart below lists data derived from the pilot program and beyond as compared to calculated annual averages for a standard gas Ford police pursuit vehicle (PPV):

Factors	2014 Tesla Model S 85	Gas Ford PPV
Vehicle Cost	$61,478.50[2]	$40,500
Standard Equipment Build Cost	$35,000*	$35,000
Modifications Above/Beyond Standard Equipment Build Cost	$6,774.48*	$0
OEM Range	265 miles (85kWh battery)	344 miles (18.6 tank cap)

[2] Tesla and City of Fremont Motor Vehicle Purchase Agreement on December 13, 2017

Actual Annual Energy/Avg. Annual Fuel Cost	$1,036 *Cost of energy consumed while charging*	$5,133 *Calculated assuming $3.00 per gallon*
Avg. Annual Repair/Maintenance Cost	$4,865	$2,915
Actual Annual Costs of Energy/ Avg. Fuel and Maintenance/Repair Costs	**$5,901**	**$8,048**
Avg. Annual Maintenance Downtime	39.125 Days (10.72%)	66 days (17.98%)
Avg. Annual Operational CO2 Emissions	0 lbs.	42,198 lbs.

**Some costs were donated as part of the Pilot Program.*

After careful review, the Pilot Program was determined to be a success. The police patrol electric vehicle met the needs of police services.

Deployment Benefits

- Performance
    - The Tesla Model S 85 met or exceeded expectations often demonstrating superior performance when compared to gas-powered police vehicles.
    - Due to the vehicle's performance, Police Officers reported an enhanced feeling of safety and control when responding to emergency calls for service.
    - Police Officers reported a reduction in anxiety and stress when responding to emergency calls for service due to fewer engine noises.
    - Police Officers reported improved radio communication due to the lack of background engine noise.
- Range and Charging
    - The Tesla Model S 85 averaged **50% power usage** during a typical patrol shift (11 hours).
    - The 265-mile range of the Tesla Model S 85 easily accommodated the 40-70-mile range that patrol vehicles drove on average per day.
    - These results provided confidence in the ability to deploy an electric vehicle (with similar range) for a standard 11-hour patrol shift.
    - Electric vehicle technology was reasonably managed utilizing available on-campus charging stations.
    - FPD currently has charging infrastructure in place to support additional electric police vehicles. Capacity, however, will be limited until expansion of charging stations is achieved.
- Durability
    - The vehicle withstood the rigorous operational demands associated with policing a mid-sized municipality.
    - City's Fleet Maintenance staff reported significant reduction in repairs, maintenance, and downtime over the course of one year when compared to current police vehicles. Due to this reduction, the Tesla Model S 85 was able to remain in service more consistently (**27 more days** than a conventional PPV).

- It is expected that the Tesla's average annual maintenance and repair costs will decrease over time as more data is available and the sample period is extended, with a roughly 50% reduction (approximately $2,910).

- Fuel Costs and Sustainability
    - Over the course of the one-year Pilot Program, the Tesla Model S 85 reduced the cost of fuel that would have been required for a traditional gas-powered police vehicle by **$4,097**.
    - Although only one vehicle out of a fleet of over 60 vehicles, the Tesla Model S 85 reduced greenhouse emissions produced annually by FPD.
    - The program demonstrated the effectiveness of electric vehicles in helping the City of Fremont meet its goals to reduce 2005 levels of GHG emissions by 55% by 2030 and achieve long-term carbon neutrality by 2045.
- Re-sale Value of the Model S
    - The total cost of ownership (TCO) over a five-year period was calculated for the Tesla Model S 85 at $132,758 and the Ford Utility Interceptor at $115,740 factoring in upfront costs such as purchase price and modification, miles driven, fuel/energy costs, and maintenance costs. However, the TCO for the Tesla Model S 85 will likely decrease over time as more data is collected and the sample period is extended. Additionally, the TCO will decrease if the vehicle exceeds 5 years of service as is projected.
    - The Tesla Model S 85 appears to **hold its value twice as well** as the average internal combustion engine (ICE) vehicle[3].
    - One study calculated the average five-year depreciation of Tesla Model S 85 to be 61.7%.[4] Taking the depreciation to be 80% after seven years, to account for the additional age and hard driving in a police application, would decrease the TCO by about $12,000-$13,000.

[3] City of Fremont Municipal Fleet Electrification Study May 2020
[4] https://www.iseecars.com/cars-for-sale#section=studies&study=cars-that-hold-their-value&v=2019

    - As the City continues to electrify its fleet, particularly if purchasing Tesla models or other long-range EVs for the Police Department, the potential higher resale value may reduce the TCO compared to ICE vehicles.

- Expected Lifespan
    - Initial data has indicated that the reduced maintenance needs of the Tesla Model S 85 will likely result in an expected lifespan of longer than five years. However, this assumption is still being proven through real-world application.

Deployment Challenges

- The Tesla Model S 85 has low ground clearance which reduces its ability to traverse certain types of terrain.
- Taller drivers of 6' or above reported the position of the Tesla Model S 85's "B pillar" made it more difficult to enter/exit the vehicle when compared to traditional Ford SUV police vehicles.
- The on-campus charging stations required two to four hours of charging to reach a full charge when battery power was at 50% or less. This created a challenge to redeploy the vehicle rapidly between consecutive patrol shifts.
    - While the on-campus Tesla charging stations were adequate for the Pilot Program, a Supercharger would be preferable to reduce the amount of time needed to redeploy the vehicle after the conclusion of a patrol shift.
- Police equipment storage was adequate in the Tesla Model S 85; however, a larger rear space would be preferred to allow for "trunk organizers" to be placed in a single location. The Tesla Model S 85 utilized the front and rear areas to accomplish storage needs which was not an ideal configuration.
- The rear seat (prisoner barrier) in the Tesla Model S 85 posed a challenge for larger prisoners due to the limited space.

RECOMMENDATIONS AND FUTURE PLANS

Though data garnered from the Electric Patrol Vehicle Pilot Program, the Fremont Police Department has concluded that it was a success and provided significant evidence that expansion of electric patrol vehicles is a feasible option.

Further, TCO calculations that were derived from the 388 City vehicles studied[5] indicated that EV replacement results in $3,156,000 of savings to the City over the next 20 years, with $2,457,000 of these savings directly related to Police vehicle replacement. Additionally, data from the City's current inventory of non-electric vehicles' greenhouse gas (GHG) emissions demonstrated that electrifying the fleet could reduce its GHG impact by 53% by 2030.

In determining the next EV to purchase, the FPD analyzed both the benefits and challenges that have been experienced with the Tesla Model S 85. Though the Tesla Model S 85 is cost-effective, energy-efficient, and a superior patrol vehicle when compared to gas vehicles, it lacks space for larger drivers and passengers, as well as sufficient rear storage for police gear.

Recently, various other car manufacturers have made significant progress in EV technology. For example, in 2021, Ford will be producing a vehicle with similar performance and specifications as the Tesla Model S 85. However, as it stands, Tesla currently remains the leading manufacturer that meets the needs of Fremont's policing environment.

To date, the FPD has already acquired two out of the three additional electric/hybrid patrol vehicles it has budgeted for the last two fiscal years: the 2020 Tesla Model Y (purchased for $57,126.83[6]) and the 2021 Ford Utility Hybrid PPV (purchased for $48,223). The third vehicle has not been purchased yet, as the City is considering a variety of car manufacturers and vehicle options prior to moving forward with this investment.

[5] City of Fremont Municipal Fleet Electrification Study May 2020
[6] Tesla and City of Fremont Motor Vehicle Purchase Agreement on July 20, 2020

The Tesla Model Y was identified as a vehicle that most closely satisfied its deployment needs and addressed many of the challenges noted in the assessment of the Tesla Model S 85 vehicle tested in the Pilot Program.

Benefits of the Tesla Model Y include:

- Lower starting price
- Crossover SUV similar to current police vehicle SUV platforms
- More rear cargo and storage for police equipment
- Increased range of over 300 miles
- Overall performance similar to Tesla Model S 85
- Added front entry/exit space enhancing driver comfort
- Higher ground clearance allowing vehicle to traverse a wide variety to terrain

Additionally, seven 2020 Ford Utility Hybrid PPVs and seven more 2021 Ford Utility Hybrid PPVs are being added to the FPD fleet to replace existing patrol vehicles that are at the end of their lifespan, funded by the City's overall vehicle replacement budget.

The City is evaluating the feasibility of a larger scale replacement of fleet vehicles with EVs over the coming years via the Municipal Fleet Electrification study cited earlier this report[7]. This study, funded through a Bay Area Air Quality Management District Climate Protection grant, identifies upfront costs, long terms savings, GHG emissions reductions calculations, and EV charging infrastructure needs associated with an EV fleet and provides recommendations to the City on possible next steps. The project team has developed a website, https://evfleet.tools/, to share resources for other public agencies wishing to conduct a similar analysis.

Looking to the future, 23 dual port level 2 chargers and 1 direct current (DC) fast charger are projected to be needed at the Fremont Police Department complex to accommodate long-term fleet vehicle electrification into 2023 and beyond.

[7] City of Fremont Municipal Fleet Electrification Study May 2020

While the added cost of EV charging infrastructure was not included in the vehicle TCO, it will be considered as a separate infrastructure upgrade cost.

The study is now further evaluating options for EV charging infrastructure, including what costs would be for transitioning EV charging infrastructure to existing or new onsite solar photovoltaic systems and adding battery energy storage options. Funding for charging infrastructure is being evaluated as well, such as grants that would support its expansion within the FPD campus.

APPENDIX

The History of the Fremont Automobile Industry and the Fremont Police Department's Green Energy Initiative Timeline

- 1962 – The General Motors Fremont Assembly line is built.
- 1997 – The Fremont Police Department (FPD) begins to patrol using the Crown Victoria.
- 2009 – The FPD purchases two Ford Escape Hybrid vehicles and five 2009 Toyota Prius vehicles.
- 2010 –The GM Fremont Assembly line closes; Tesla Motors announces they had purchased part of the GM plant.
- 2011 – The FPD deploys nine Ford Escape Hybrids for CSO fleet; FPD discontinues use of the Crown Victoria.
- 2012 – The City of Fremont begins to implement the Climate Action Plan with the goal of reaching 25% greenhouse gas emission reductions from a 2005 baseline by the year 2020.
- 2016 –The FPD deploys five Ford Fusion Hybrids for command staff and admin Lieutenants.
- 2017 – The FPD purchases and deploys two additional Ford Fusion Hybrid Plug-Ins.
- 2018 – The FPD purchases and deploys one additional Ford Fusion Hybrid Plug-Ins for command staff; All Chief, Captains, and Administrative Lieutenants are driving hybrid vehicles; Tesla vehicle purchased.
- 2019 – The 2014 Tesla Model S 85 begins to patrol along with the 2019 Ford Fusion Police Responder PPV.
- 2020 – The Fremont Police Department shares findings from the nation's first Electric Patrol Vehicle Pilot Program.

The Fremont Police Department's Current Hybrid Fleet

- 9 Ford Escape Hybrids for Community Service Officers
- 9 Ford Fusion Hybrids for Admin Lieutenants
- 3 Ford Fusion Hybrid Plug-Ins for Chief and Captains
- 5 Toyota Prius Vehicles for Admin assignments
- 1 2019 Fusion Hybrid Responder PPV
- 1 Tesla Model S 85

- 1 Tesla Model Y
- 7 2020 Ford Utility Hybrid PPVs
- 8 2021 Ford Utility Hybrid PPVs

Additional Sustainability Facts from the Fremont Police Department

- The City's General Plan vision is for Fremont to serve as a national model of how an auto-oriented suburb can evolve into a sustainable, strategically urban, modern city.
- The City's Robert Wasserman Police Complex has 872 kW of solar carport structures installed onsite, providing clean and renewable electricity to the facility and to the electric vehicle as well as saving the City money on its electricity and vehicle operation bills.
- With all of Fremont's electricity supply coming from either onsite renewable solar power or 100% carbon-free, grid-based electricity through East Bay Community Energy (EBCE), each police vehicle that is replaced with an EV will completely zero out the greenhouse gas emissions associated with that vehicle's operation.

The Fremont Police Department Police Patrol Vehicle Image Gallery

A fleet of vintage Fremont police patrol vehicles sit outside the Fremont Police Station.

A Police Officer poses with a pedestrian while out on patrol.

A Police Officer smiles next to his police patrol vehicle.

The FPD's 1958 Chevy

The FPD's Tesla Model S 85, complete with modifications

The Tesla Model S 85 is tested ahead of its deployment in 2019.

ATTACHMENT 2

Fremont Police Department Tesla Model Y

Media Kit

FREMONT POLICE DEPARTMENT

ELECTRIC VEHICLE PILOT PROGRAM

THE PROGRAM

SEPTEMBER 2021 UPDATES

In 2019, Fremont Police Department (FPD) deployed its first fully electric-powered vehicle (EV) as part of its patrol fleet. After a year of data collection, results found that the pilot vehicle, a used 2014 Tesla Model S 85, exceeded performance and operational objectives, withstood the rigors of police use required minimal maintenance, and was cost-effective when factoring in the overall cost of the vehicle with maintenance and fuel savings. To date, FPD has acquired one additional fully electric patrol vehicle, a new 2020 Tesla Model Y, deploying in September 2021.

VEHICLE COMPARISON

2014 TESLA MODEL S 85

- RWD
- 85 kWh battery
- 265 miles range (EPA)
- 5.4 seconds 0-60 mph
- Mileage when acquired: 26,471
- Selling Price: $55,800
- Cost inc. tax & fees: $61,478.50
- Purchase Invoice Paid: Dec 2017
- Possession Date: Jan 2018

2020 TESLA MODEL Y

- Long Range AWD, dual motors
- 74 kWh battery
- 316 miles range (EPA)
- 4.8 seconds 0-60 mph
- Mileage when acquired: N/A
- Selling Price: $52,290
- Total Cost inc. tax & fees: $57,126.83
- Purchase Invoice Paid: July 2020
- Possession Date: July 2020

MODIFICATIONS MADE TO BOTH VEHICLES

- Overhead light-bar and siren
- Headlight and rear flashers
- Equipment console and electronics tray
- Mobile digital computer and mounting system
- Police vehicle radio
- Vehicle camera
- Push-bumper
- Prisoner partition
- Prisoner seat
- Ballistic door panels for driver and front passenger doors
- Trunk lights
- Driver & passenger spotlights (Model Y only)
- Pushbar spotlight and wheel well lights (Model S 85 only)

FREMONT POLICE DEPARTMENT

ELECTRIC VEHICLE PILOT PROGRAM

PROGRAM RECAP

- The results from the one-year Electric Patrol Vehicle Pilot Program are encouraging as the City of Fremont continues to look for cost-effective ways to help make Fremont more sustainable and achieve long-term carbon neutrality by 2045.
- The Tesla Model S 85 yielded an average of 27 fewer days of downtime per year, a savings of $2,147 in the total annual cost of energy/fuel, maintenance, and repair, and a reduction of 42,198 lbs. of operational carbon dioxide emissions. These results have prompted Fremont PD to move forward with plans to expand its fleet of electric patrol vehicle alternatives, including the newly deployed Tesla Model Y. For the coming fiscal year, FPD ordered three 2022 Ford Explorer hybrids as well as two Ford Mustang Mach-E EVs to be used as unmarked vehicles for sworn administrative assignments.
- This year, FPD added one additional charger to accommodate the new Model Y. Looking to the future, 23 dual port level 2 chargers and 1 direct current (DC) fast charger are projected to be needed at the Fremont Police Department complex to accommodate long-term fleet vehicle electrification into 2023 and beyond.
- To download the report and find additional information about the Tesla pilot project, visit fremontpolice.gov/ElectricVehicle

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ATTACHMENT 3

City of South Pasadena 2020 Climate Action Plan

Due to file size, the Executive Summary is attached in this report.
The full South Pasadena Climate Action Plan can be viewed here:

http://southpasadenacap.rinconconsultants.com

South Pasadena CAP Executive Summary

Climate Action Vision

The effects of climate change are already felt and are projected to worsen over the next century without a concerted global effort to address the sources of greenhouse gas (GHG) emissions. South Pasadena's Climate Action Plan (CAP) details a set of strategies for South Pasadena to reduce its emissions, prepare for and mitigate approaching risks, and chart the course towards a sustainable future. Key components of that future include:

- ✓ **Vibrant Communities**
- ✓ **Engaged Citizens**
- ✓ **Social Equity**
- ✓ **Resilient Economy**
- ✓ **Environmental Stewardship**
- ✓ **Regional Leader in Sustainability**

Background

The CAP is a long-range planning document that guides the City towards long-term emissions reductions in accordance with State of California goals. The CAP analyzes emission sources within the City, forecasts future emissions, and establishes emission reduction targets (See The Playing Field and Appendix C). This CAP is the City of South Pasadena's roadmap to achieving the City's 2030 target and state mandated goal of 40% below 1990 levels by 2030 and demonstrates substantial progress towards achieving carbon neutrality by 2045. The CAP also establishes a framework for implementation and monitoring of reduction activities, and further promotes adaptation and preparedness actions. This CAP has been developed as a qualified GHG Reduction Plan and meets the requirements of CEQA 15183.5(b).

Potential Impacts to the Community

The City of South Pasadena may experience a variety of impacts due to climate change including an increase in average temperature and changes in precipitation, as outlined in Figure 1

Figure 1 Impacts of Climate Change in the City of South Pasadena (~2100)

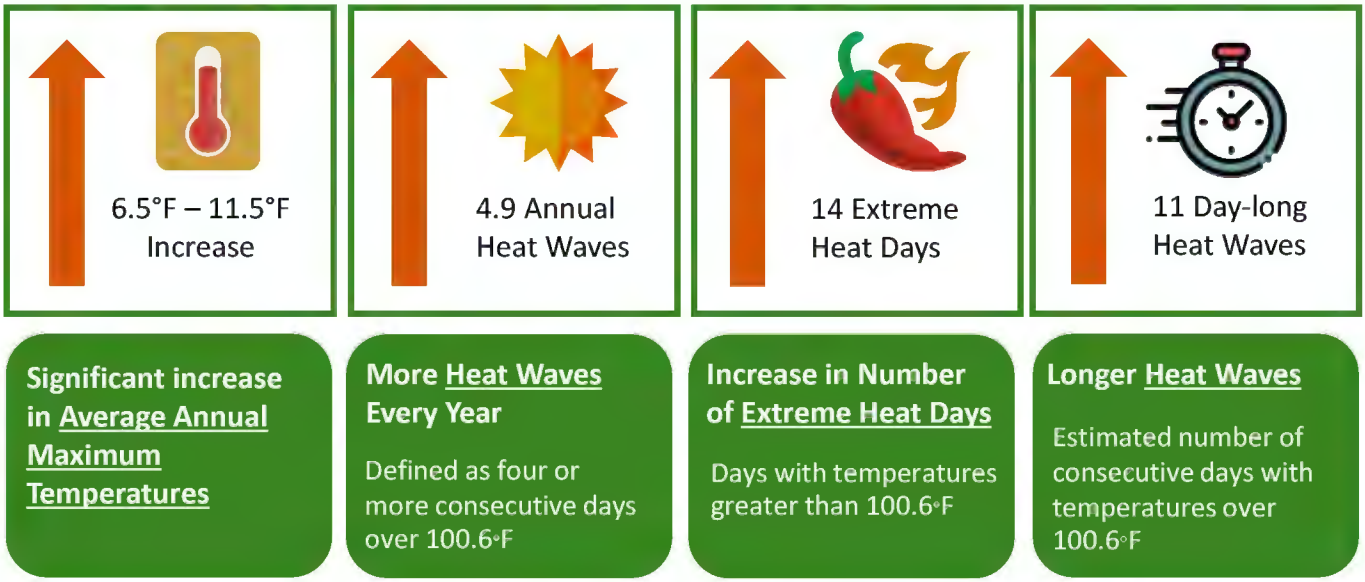
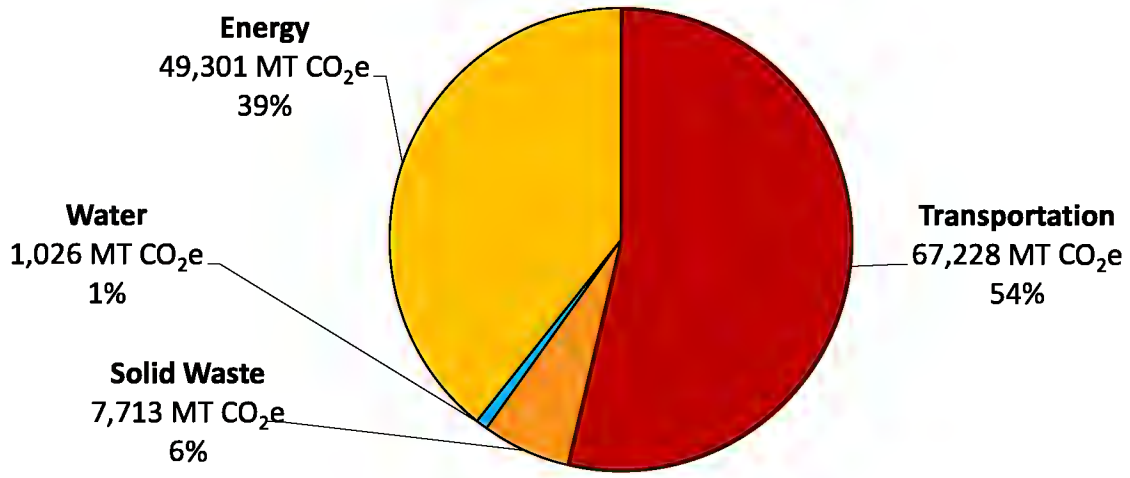


Figure 2 2016 Community-wide Emissions Summary by Sector



Baseline GHG Emissions

This CAP includes a 2016 baseline inventory of GHG emissions from municipal operations and community-wide activities within the City. It is important to note that the municipal operations inventory is a subset of the community inventory, meaning that the municipal emissions are included within the community-wide inventory. See Figure 2 for a per sector community emissions summary.

Emissions Forecast

Emissions forecasts (what we predict GHG emissions to be in the future) are generated from the 2016 baseline inventory to help identify actions that must be taken now in order to meet future targets. This CAP identifies GHG emissions reduction targets for the years 2020 (AB 32 target year), 2030 (SB 32 target year), 2040 (City of South Pasadena's General Plan horizon year), and 2045 (EO B-55-18 target year).

Emissions Targets

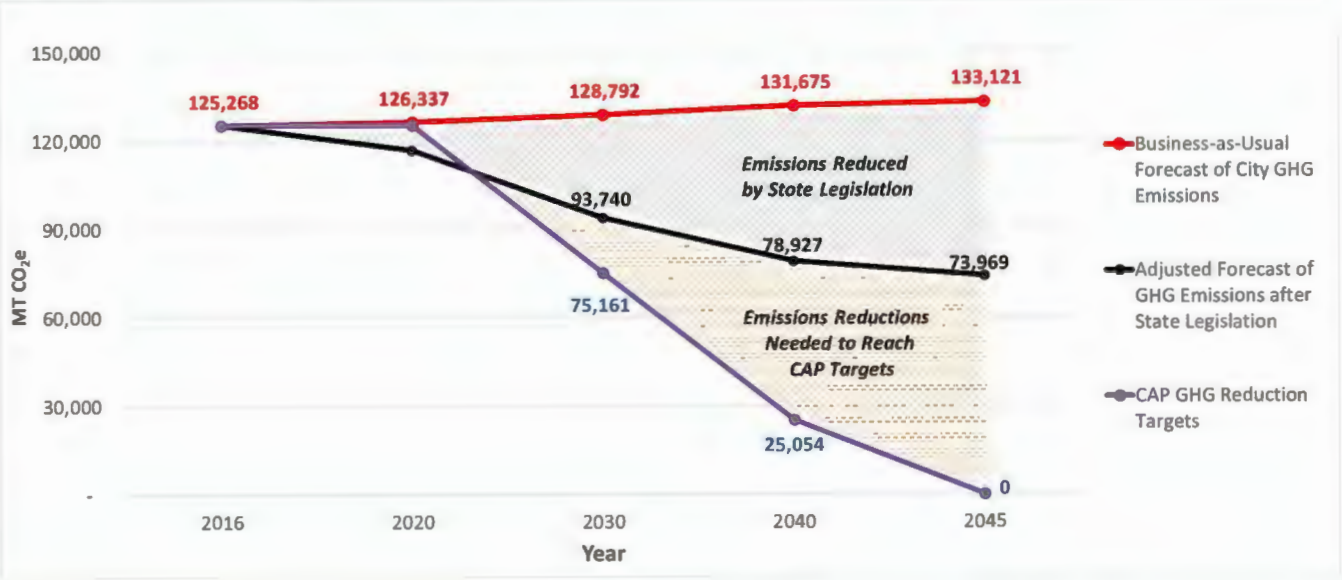
After analyzing the City's baseline inventory and forecast scenarios, emission targets were set to create quantitative goals that will further the City's ability to measure emission reduction progress from the baseline scenarios. The 2016 baseline emissions were reduced by 40 percent to establish a 2030 target of 75,161 MT CO_2e for the City. In accordance with the new California Air Resource Board (CARB) methodology and the statewide goal established in SB 32, this absolute emissions target was then translated into a 2030 per capita emission target of 2.9 MT CO_2e per year by dividing the 2030 absolute target by South Pasadena's projected population in 2030.

As shown in Figure 3, South Pasadena would require implementing local reduction measures to meet the state targets established for 2030 and 2045 even after accounting for reductions that will result from state regulations.

[redacted]

At its core, the CAP aims to reduce GHG emissions in the City through equitable, achievable, and implementable actions that benefit all South Pasadenans. The Plays (measures) and Moves (actions) included in the CAP were established and refined to meet the City's GHG emission reduction target for 2030 and provide substantial progress towards meeting the longer-term target of carbon neutrality by 2045, which align with the state's goals and is the City's fair share towards achieving the state's overall climate goals (see Table 1 for a summary of the Plays included in the CAP).

Figure 3 Community Emissions, Targets, and Reductions Needed to Meet Targets



Cornerstones of Climate Action Planning

The City of South Pasadena acknowledges that long-term sustainable change must occur to reduce our GHG emissions and limit our impact on climate change. This change will come from a collective commitment to reduce emissions through implementation of effective and equitable emission reduction strategies, such as the Plays and Moves outlined in this CAP. High-quality climate action planning is built on six essential components that result in implementable and effective GHG emission reduction strategies.

These six essential components, ***education, structural change, GHG reductions, equity, connectivity, and economical design***, are the cornerstones that lay the foundation for transformational change and are essential to engage the community and fulfill the emissions reductions goals laid out in the Plan.

South Pasadena's CAP includes 15 specific Plays designed to reduce GHG emissions associated with Energy, Transportation, Water, Waste, Sequestration, and Municipal Operations. Each Play is supported by Moves that were designed to incorporate the cornerstone components of climate action planning and create unique solutions to climate change, which are summarized in Table 1.

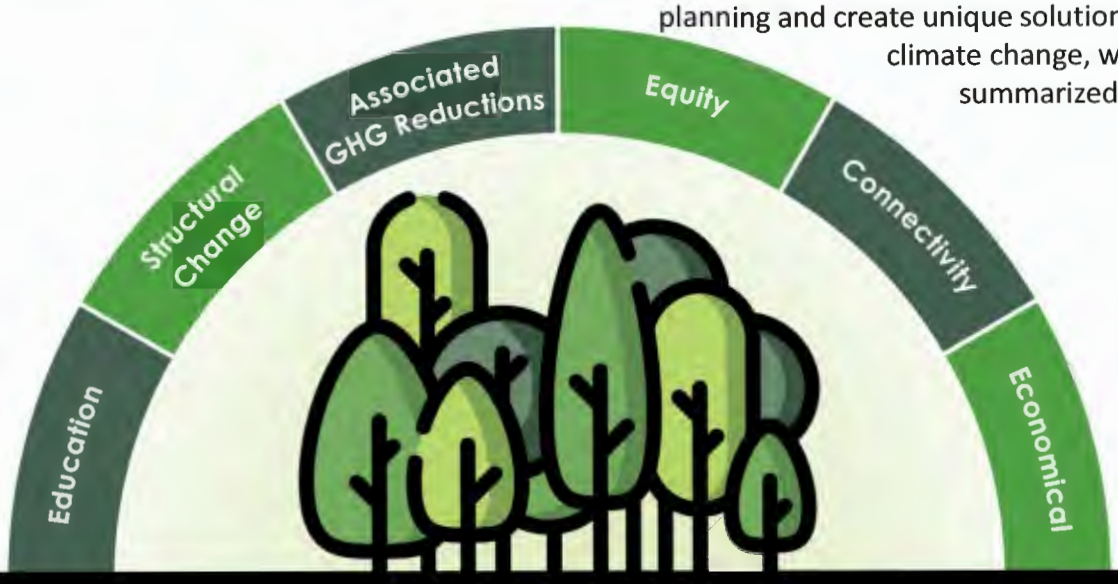


Table 1 Emission Reduction Plays and Moves Summary

Sector	Play		GHG Emissions Reduction Contribution
Cornerstone	C.1	Engage South Pasadena youth in climate change action and provide education on ways to live a sustainable lifestyle.	2030: 25 MT CO_2e 2045: 78 MT CO_2e
Energy	E.1	Maximize the usage of renewable power within the community, by continuing to achieve an opt-out rate lower than 4% for the Clean Power Alliance.	2030: 13,408 MT CO_2e 2045: 0 MT CO_2e
	E.2	Require electrification of 100% of newly constructed buildings.	2030: 240 MT CO_2e 2045: 984 MT CO_2e
	E.3	Electrify 5% of existing buildings by 2030 and 80% by 2045.	2030: 1,184 MT CO_2e 2045: 19,355 MT CO_2e
	E.4	Develop and promote reduced reliance on natural gas through increased clean energy systems that build off of renewable energy development, production, and storage.	Supportive of 2030 and 2045 Goals
Transportation	T.1	Increase use of zero-emission vehicle and equipment 13% by 2030 and 25% by 2045.	2030: 3,774 MT CO_2e 2045: 6,629 MT CO_2e
	T.2	Implement programs for public and shared transit that decrease passenger car vehicle miles traveled 2% by 2030 and 4% by 2045.	2030: 807 MT CO_2e 2045: 1,399 MT CO_2e
	T.3	Develop and implement an Active Transportation Plan to shift 3% of passenger car vehicle miles traveled to active transportation by 2030, and 6% by 2045.	2030: 1,186 MT CO_2e 2045: 2,015 MT CO_2e
Water and Wastewater	W.1	Reduce per capita water consumption by 10% by 2030 and 35% by 2045.	2030: 414 MT CO_2e 2045: 0 MT CO_2e
Solid Waste	SW.1	Implement and enforce SB 1383 organics and recycling requirements to reduce landfilled organics waste emissions 50% by 2022 and 75% by 2025.	2030: 1,702 MT CO_2e 2045: 1,764 MT CO_2e
	SW.2	Reduce residential and commercial waste sent to landfills by 50% by 2030 and 100% by 2045.	2030: 415 MT CO_2e 2045: 859 MT CO_2e
Carbon Sequestration	CS.1	Increase carbon sequestration through increased tree planting and green space.	2030: 19 MT CO_2e 2045: 39 MT CO_2e
Municipal	M.1	Reduce carbon intensity of City operations.	2030: 188 MT CO_2e 2045: 188 MT CO_2e
	M.2	Electrify the municipal vehicle fleet and mobile equipment.	2030: 23 MT CO_2e 2045: 23 MT CO_2e
	M.3	Increase City's renewable energy production and energy resilience.	Supportive of 2030 and 2045 Goals
Total			**2030: 23,386 MT CO_2e** **2045: 33,333 MT CO_2e**

Note: South Pasadena would be required to reduce 18,578 MT CO_2e by 2030, 53,874 MT CO_2e by 2040, and 73,969 MT CO_2e by 2045 to meet the City's targets and state goals.

ATTACHMENT 4

Tesla 2021 Impact Report

Impact Report 2021

Foreword on Impact

Current ESG evaluation methodologies are fundamentally flawed. To achieve acutely-needed change, ESG needs to evolve to measure real-world **Impact**.

What ESG measures today: Investment Risk

Current environmental, social and governance (ESG) reporting does not measure the scope of positive impact on the world. Instead, it focuses on measuring the dollar value of risk / return.

Individual investors – who entrust their money to ESG funds of large investment institutions – are perhaps unaware that their money can be used to buy shares of companies that make climate change worse, not better.

An obvious example of this is measuring the impact of the automotive industry. One might think that the more electric vehicles an automaker sells, as a percentage of total volumes, the better its ESG score. However, this is not the case. As long as a company continues to slightly decrease emissions of its manufacturing operations while churning out gas-guzzlers, its ESG ratings are likely to go up.

Vehicle use-phase emissions, which represent 80-90% of total automotive emissions (included in Scope 3 of ESG reporting), tend to be misreported due to the use of unrealistic assumptions or not reported at all.

It's easy to see why some oil & gas companies rank higher than Tesla on "Environmental Impact."

"The most striking feature of the [ESG rating] system is how rarely a company's record on climate change seems to get in the way of its climb up the ESG ladder—or even to factor at all."

ESG Mirage: Bloomberg Businessweek

What ESG needs to become: Company Impact

We need to create a system that measures and scrutinizes actual positive impact on our planet, so unsuspecting individual investors can choose to support companies that can make and prioritize positive change.

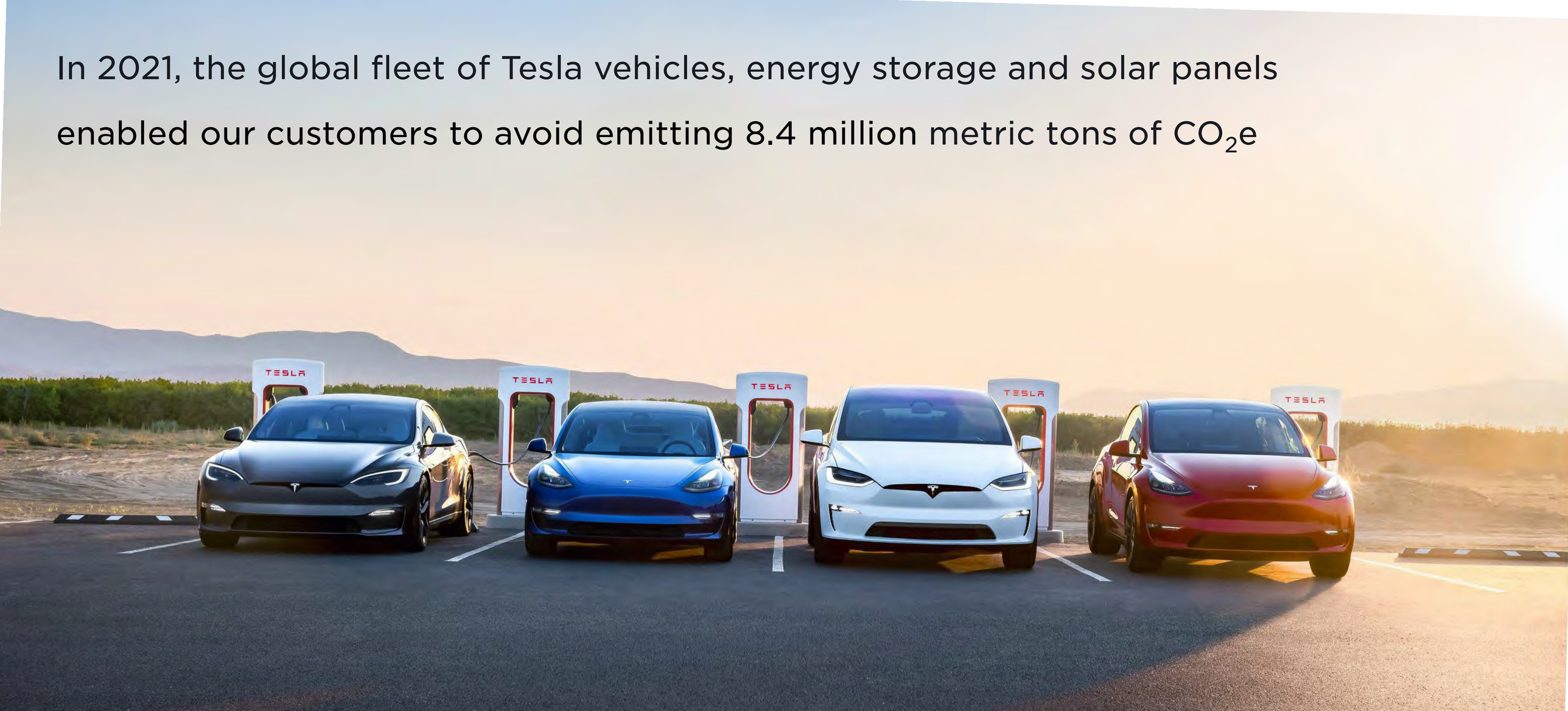
On the product front, companies should be required to use real-world data wherever remotely feasible and make it clear when estimates are provided instead of real-world figures. An example of this is vehicle "use-phase" emissions, accounting for the vast majority of lifecycle emissions. Automakers' estimates on lifetime vehicle mileage and lifetime fuel consumption vary dramatically and almost never reflect real-world data. Automakers often have access to this data, but they don't disclose it.

When it comes to a company's employees, it is essential that they're treated well, with a system in place to prevent discrimination of any kind, that they have a safe workplace and that they are rewarded appropriately, with significant upside if their employer does well.

Many ESG ratings evaluate: "Does this ESG issue impact the profitability of the company?" We need a system that evaluates: "Does the growth of this company have a positive impact on the world?"

This evolution of ESG needs to be championed by institutional investors, rating agencies, public companies and the general public. As the world needs to strive for a substantial positive impact, we won't be referring to ESG in this report. Instead, we'll talk about Impact.

In 2021, the global fleet of Tesla vehicles, energy storage and solar panels enabled our customers to avoid emitting 8.4 million metric tons of CO_2e



The 6.8 million metric tons of vehicle CO_2e savings estimate is based on the net CO_2e savings during the use-phase of a Tesla vehicle compared to an ICE vehicle with a real-world fuel economy of ~24 mpg (of which 0.9 million metric tons was avoided through annual renewables matching for the global Supercharger network and home charging in California). The 1.6 million metric tons of solar + storage CO_2e savings estimate is based on CO_2e avoided through generation of zero-emission electricity from Tesla solar panels, including energy stored and later dispatched from our energy storage products. Geographic distribution of our deliveries (both vehicle and solar), grid mix at the country, state and province level and upstream emissions are reflected in these figures.

The Future is Electric

Lifetime fuel consumption and use-phase GHG emissions

30,000 litres (~8,000 U.S. Gallons) of fuel burned per car

70 tons of CO_2e released into the atmosphere

Burned fossil fuel is extremely difficult to decarbonize
as carbon capture is not economically viable today

70 MWh of electricity charged per car

30 tons of CO_2 released, assuming current global grid mix

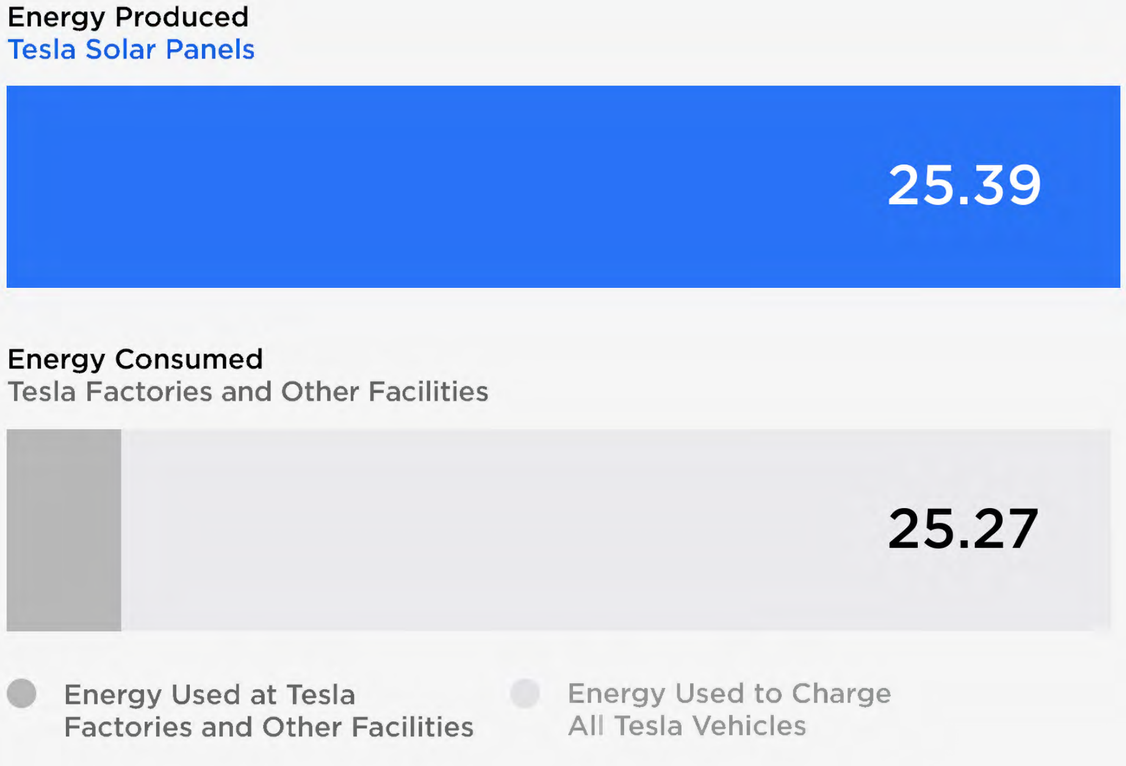
Production and lifetime use of EVs is possible to decarbonize
using well-established technologies

Battery pack is recycled at the end-of-life and used
to build a brand-new battery pack, over and over again.

More Energy Generation Than Consumption

Tesla solar panels have generated more electricity than has been consumed by our vehicles and factories between 2012 and 2021

Tesla Cumulative Net Energy Impact: 2012-2021 (TWh)



Cover location: Arevon's Townsite Solar and Storage Facility

Our Goals

Tesla's purpose is to accelerate the world's transition to sustainable energy.

We strive to be the best on every metric relevant to our mission to accelerate the world's transition to sustainable energy. To maximize our impact, we plan to continue increasing our production volumes and the accessibility of our products. In more concrete terms, this means that by 2030 we are aiming to sell 20 million electric vehicles per year (compared to 0.94 million in 2021) and deploy 1,500 GWh of energy storage per year (compared to 4 GWh in 2021).

If we were to achieve such a vehicle delivery milestone through a consistent growth rate, the total Tesla vehicle fleet would surpass tens of millions of vehicles by 2030, and each of those vehicles could save tons of CO_2e emissions every year of usage.

Furthermore, each product we make must be continuously improved at each step of its lifecycle: from manufacturing to consumer use to recycling.

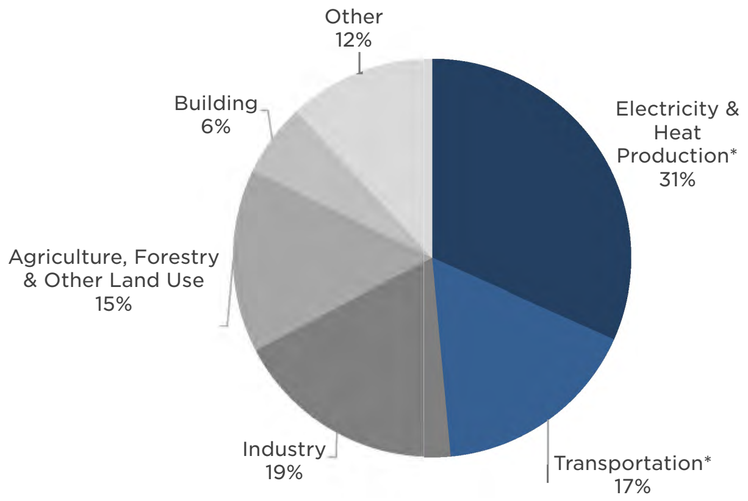
We must also improve every metric, including the energy and water used to make our products, how safe our customers and employees are and the affordability and accessibility of our products. Each of these themes will be covered in this year's Impact Report.

Making an Impact
Mission and the Tesla Ecosystem

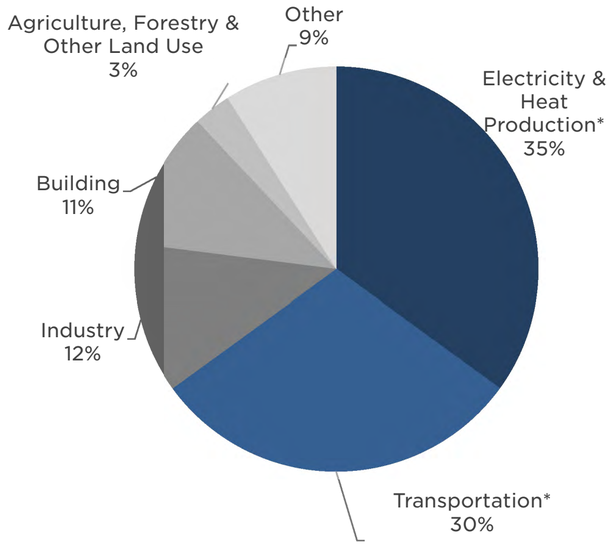
Sustainability drives us. And not just our products — it drives our values and mission as a company. It's at the core of everything we do and is what motivates us in our work. It also matters greatly to our customers, employees and shareholders. Our products and services are focused on transportation, energy production and storage — each of which have traditionally been some of the biggest polluters both in the U.S. and globally.

To achieve a zero-emissions future, we continue to implement programs and initiatives at our global manufacturing facilities and in our local communities.

Global
Greenhouse Gas (GHG) Emissions
by Economic Sector



U.S.
Greenhouse Gas (GHG) Emissions
by Economic Sector

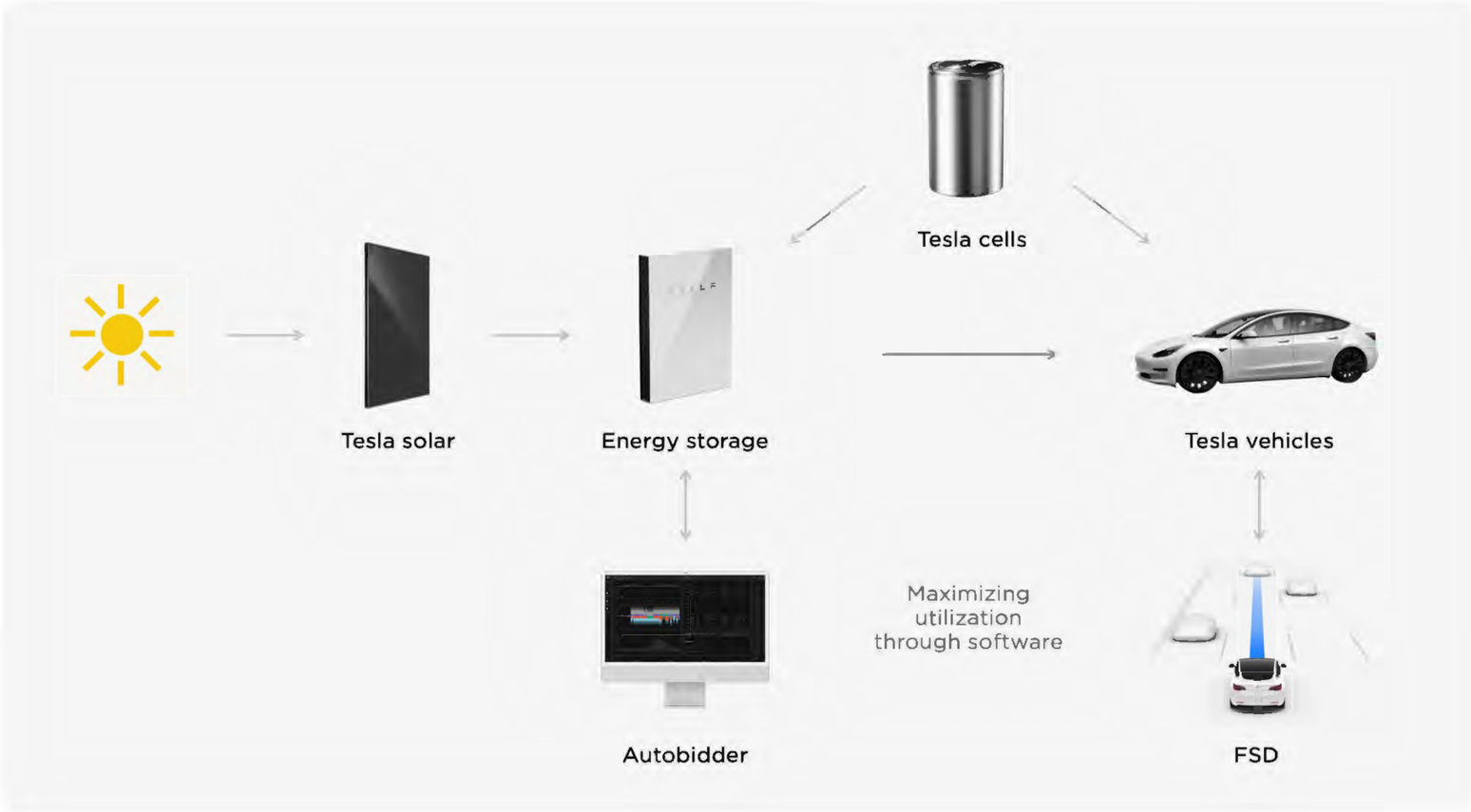


*Tesla-related sectors. Source: World Resources Institute

Addressing climate change through an entire ecosystem

Climate change is reaching alarming levels globally due in large part to emissions from burning fossil fuels for transportation and electricity generation. The world cannot reduce GHG emissions without addressing both energy generation and consumption. And the world cannot address its energy habits without first directly reducing emissions in the transportation and energy sectors.

We are designing and manufacturing a complete energy and transportation ecosystem. We both develop the technology behind this ecosystem and focus on the affordability of the products that comprise it. We seek to achieve this through our R&D and software development efforts as well as through our continuous drive to develop advanced manufacturing capabilities.



Corporate Governance

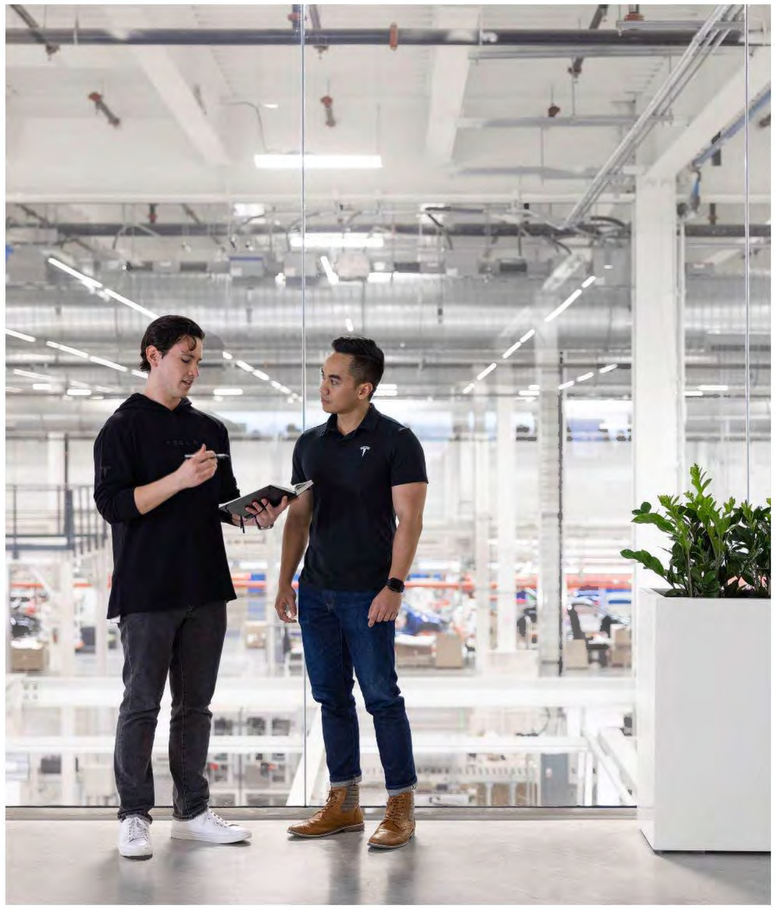
Management involvement

At Tesla, sustainability is everyone's job regardless of their position, geographic location or title. Our Sustainability Council, made up of leaders from across Tesla, collects data and prepares the analysis and content of this report. The Sustainability Council also presents this information to Tesla's Board of Directors for review.

Board of Directors oversight

The Board of Directors serves as a prudent fiduciary for shareholders and oversees the management of Tesla's business — including reviewing the effectiveness of Tesla's Impact priorities, initiatives and programs and this report. With those responsibilities in mind, the Board sets high standards for Tesla and its employees, officers and directors; and we periodically add new, highly qualified independent directors to the Board, such as Larry Ellison and Kathleen Wilson-Thompson in 2018 and Hiromichi Mizuno in 2020. Implicit in this approach is the importance of sound corporate governance.

Corporate Governance
Introduction



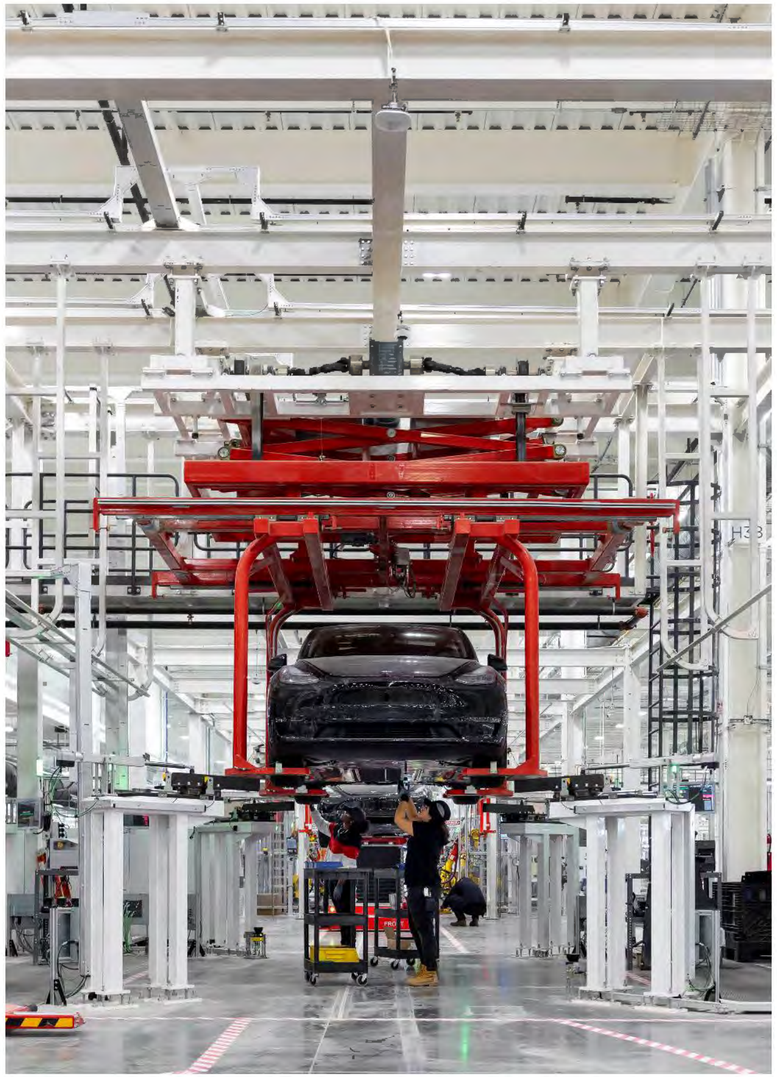
Sound corporate governance is critical to our mission. We are committed to establishing an operating framework that exercises appropriate oversight of responsibilities at all levels throughout the company and manages its affairs consistent with high principles of business ethics.

Tesla aspires to be a “do the right thing” company. Our Code of Business Ethics sets out basic principles that should help anyone working at or for Tesla avoid even the appearance of improper behavior. Tesla’s Code of Business Ethics and our Corporate Governance Guidelines are available on Tesla’s website.

In addition, we believe in regular and transparent communication with employees. We encourage Tesla employees to share their feedback openly (and anonymously, if they prefer), and provide easy methods to do so. We also regularly conduct employee surveys to identify strengths and opportunities for improvement. We have a robust action planning process to ensure we proactively address the concerns or feedback.

We also have a whistleblower hotline through which employees can report concerns at any time. Tesla keeps information reported by employees in confidence, whether through the hotline or another channel. Our policies prohibit retaliatory actions against employees for raising concerns or making complaints. We are committed to maintaining an open and transparent culture where it is safe and acceptable for all employees to raise concerns about policy violations by their manager or colleagues or about the workplace overall.

Corporate Governance
Our Approach



Our unique business requires a unique approach to corporate governance. And our mission requires a long-term focus that we believe will ultimately maximize value to our employees and our stockholders. Our corporate governance structure has facilitated several key decisions which might have appeared counter-intuitive to some, but which have set up the Tesla to achieve long-term success. Some examples include our decisions to:

- Manufacture all-electric vehicles (EVs) from the ground up rather than being a mere supplier of EV components
- Establish an international network of our own stores, service centers and Supercharger stations despite regulatory hurdles and the significant capital outlay required to do so
- Build Gigafactory 1, the largest lithium-ion battery factory in the world, so that we can scale most effectively
- Expand into energy generation and storage through the acquisition of SolarCity Corporation in 2016 to create a vertically integrated sustainable energy company and empower individual consumers to be their own utility
- Deploy FSD city streets beta software to our fleet to develop complete Full Self-Driving capability in the future
- Compensate our CEO only if other shareholders realize tremendous value

These and other similar decisions were made due to our corporate governance structure and, ultimately, decisions like these are what differentiate Tesla from other companies and are a significant reason why the annualized stockholder return since our 2010 IPO until December 31, 2021 equaled 65%. At the same time, the Board continuously evaluates our corporate governance structure, practices and policies, and weighs stakeholder feedback including proposals we have historically received at our annual meetings. For example, at our 2021 annual meeting of stockholders, the Board proposed and recommended that stockholders adopt an amendment to our certificate of incorporation to reduce the term of our directors to two years. However, our stockholders did not approve that proposal.

The Board is directly and regularly engaged with senior management and the Sustainability Council and participates in robust shareholder outreach and feedback. In addition, our directors have significant experience as either top-level executives at public companies, as successful investors or as entrepreneurs who founded successful organizations.

Corporate Governance
Board Committees (as of March 1, 2022)

Name	Function	Year joined	Audit Committee	Compensation Committee	Disclosure Controls Committee	Nominating & Governance Committee
Robyn Denholm	Independent Board chair	2014	X	X	X	X
Elon Musk	Director and CEO	2004				
Ira Ehrenpreis	Independent director	2007		X		X
Larry Ellison	Independent director	2018				
Hiromichi Mizuno	Independent director	2020	X			
James Murdoch	Independent director	2017	X		X	X
Kimbal Musk	Director	2004				
Kathleen Wilson-Thompson	Independent director	2018		X	X	X

Committees of the Board

The Board has four standing committees — the Audit Committee, the Compensation Committee, the Nominating and Corporate Governance Committee and the Disclosure Controls Committee — which are each further described in the following pages. Each member of these committees qualifies as an independent director under the listing standards of NASDAQ. In addition, as part of our governance review and succession planning, the Board (led by the Nominating and Corporate Governance Committee) evaluates our leadership structure to ensure that it remains the optimal structure for Tesla, reviews the composition, size and performance of the Board and its committees, evaluates individual directors and identifies and evaluates candidates for election or re-election to the Board. Committee charters were updated in 2021 to reflect the growing risks and opportunities around ESG.

Board role in risk oversight

The Board is responsible for overseeing the major risks facing Tesla, while management is responsible for assessing and mitigating Tesla's risks on a day-to-day basis. In addition, the Board has delegated oversight of certain categories of risk to its independent committees, which then report to the Board, as appropriate, on matters that involve the specific areas of risk that each committee oversees.

Corporate Governance

Board Committees (as of March 1, 2022)

Name	Function	Year joined	Audit Committee	Compensation Committee	Disclosure Controls Committee	Nominating & Governance Committee
Robyn Denholm	Independent Board chair	2014	X	X	X	X
Elon Musk	Director and CEO	2004				
Ira Ehrenpreis	Independent director	2007		X		X
Larry Ellison	Independent director	2018				
Hiromichi Mizuno	Independent director	2020	X			
James Murdoch	Independent director	2017	X		X	X
Kimbal Musk	Director	2004				
Kathleen Wilson-Thompson	Independent director	2018		X	X	X

Audit Committee

The Audit Committee is responsible for, among other things, assisting the Board in providing oversight of Tesla's accounting and financial reporting processes and the audit of its financial statements, including oversight over the integrity of such statements, the Company's compliance with legal and regulatory requirements, the independent auditor's qualifications, independence and performance, the organization and performance of the Company's internal audit function, as well as the Company's internal accounting and financial controls, treasury and finance matters, risk management, including data privacy and cybersecurity. The Audit Committee also reviews and discusses the accounting assessment of this report and other ESG disclosures.

Compensation Committee

The Compensation Committee is responsible for, among other things, discharging the Board's responsibilities in administering and overseeing Tesla's compensation policies, plans and benefit programs, the compensation of Tesla's executive officers and members of the Board, the administration of the Company's employee benefit plans and the review of human capital management practices related to Tesla's talent generally (including how Tesla recruits, develops and retains diverse talent).

Disclosure Controls Committee

The Disclosure Controls Committee, among other things, implements, reviews and monitors Tesla's compliance with applicable legal requirements governing the Company's and its executive officers' public disclosures and public statements relating to the Company.

Nominating and Corporate Governance Committee

The Nominating and Corporate Governance Committee is responsible for, among other things, reviewing and making recommendations to the Board on matters concerning corporate governance, Board composition, the identification, evaluation and nomination of director candidates and composition of Board committees and conflicts of interest. In addition, this Committee oversees Tesla's corporate governance practices and reviews annually the principles of corporate governance approved by the Board, including the Company's Code of Business Ethics and Corporate Governance Guidelines, to ensure that they remain relevant and are being complied with and monitored by management, recommending changes to the Board as necessary.

Compensation Philosophy

Our compensation philosophy reflects our long-term mission and our startup origins. We emphasize structuring compensation to reward our named executive officers based on performance, and equity awards weigh heavily in our named executive officers' total compensation, including awards that vest upon the achievement of clear and measurable milestones. Since these awards increase in value as our stock price increases (and in the case of stock option awards, have no value unless our stock price increases following their grant), our named executive officers' incentives are closely aligned with the long-term interests of our stockholders.

Tesla has no cash bonus program for any of our named executive officers and generally does not provide any perquisites or tax reimbursements to our named executive officers that are not available to other employees. No named executive officer has any severance or change of control arrangement, except as reflected in Elon Musk's performance-based 2018 CEO Performance Award. A change in control modifies the vesting requirements of the 2018 CEO Performance Award such that vesting of the Award's tranches would be measured based on Tesla's market capitalization at the time of the change of the control, without regard to the operational milestones of the Award. Elon Musk, our Chief Executive Officer, historically earned a base salary that reflected the applicable minimum wage requirements under California law, and he was subject to income taxes based on such base salary. However, he has never accepted his salary. Commencing in May 2019 at Mr. Musk's request, we eliminated altogether the earning and accrual of this base salary. Consequently, 100% of Mr. Musk's compensation is at-risk.

Similarly, the compensation program for Tesla's non-employee directors is designed to be consistent with our compensation philosophy for our employees, with an emphasis on equity-based compensation over cash in order to align the value of their compensation with the market value of our stock, and consequently, with the long-term interests of our stockholders. Moreover, while we offer to our general employee population restricted stock units that will retain some value even if the market value of our stock decreases, the equity-based compensation to our directors has been exclusively in the form of stock options, which have zero initial value and accumulate value, if at all, only to the extent that our stock price increases following their grant, through the applicable vesting dates and until such stock options are ultimately exercised and the underlying shares are sold. The remaining portion of our directors' compensation has been comprised of cash retainer payments that are relatively modest compared to peer companies and that may be waived at the election of each director. Further, in June 2021, the Board adopted a resolution that all existing directors forego any automatic grants of annual stock option awards under our director compensation policy until July 2022 unless the Board determines otherwise.

Tesla builds products with privacy and security at their core

We believe that responsible data management and transparency is a prerequisite for continuous innovation. We live up to this commitment by providing information and controls in our products that let you choose how your personal data is collected and used.

Managing data privacy is a shared task through all levels of our organization

Data privacy is a shared responsibility in which every employee and our Board is expected to participate. Tesla has a large and diverse team of privacy and security professionals from all over the world and across legal, engineering and product organizations, who are dedicated to protecting customer data. Additionally, the Audit Committee of the Tesla Board of Directors is regularly briefed on incidents, emerging trends, controls and corrective actions taken by Tesla to ensure we are living up to our obligations and Privacy Principles.

Tesla's Privacy Principles

Tesla is guided not only legally by its obligations under global privacy laws and regulations, but also by customer expectations and our Privacy Principles.

We do the right thing with data. We maintain trust by handling data as customers expect, keeping it accurate and complete and properly destroying it when it is no longer needed.

- We build privacy into our products from start to finish. Ensuring privacy is an important component when building world-class products and services, from inception to rollout and beyond.
- We give customers choices about their data. We put individuals in control by giving them clear and transparent ways to access, review, manage and delete their data with ease.
- We maintain trust through transparency. We are clear about the personal data we collect and how we're using or sharing it – ensuring that choosing a connected vehicle does not come at the sacrifice of customer privacy.
- We safeguard personal data. We implement rigorous controls and standards designed to protect the security, confidentiality and integrity of Tesla's data environment.

Privacy from day one

Tesla's Privacy Principles and commitments are illustrated throughout all our products. For Tesla vehicles, customer personal data is protected from the moment they take delivery, ensuring that by default the vehicle data generated when driving is not associated with the customer's account or vehicle identification number. Tesla also puts customers in the driver's seat when it comes to data sharing by providing a dedicated in-vehicle menu to adjust preferences at any time.

Additionally, from Powerwall to Solar Roof, energy products are designed to protect customer privacy. Tesla aims to collect a minimum amount of personal data necessary in providing the most engaging in-app energy experience. In furtherance of transparency, Tesla has developed a seamless way for customers to download and access their energy data at any time right from the Tesla app.

Engaging the security community

We are also focused on ensuring that our vehicles are the most secure on the road. To do that, our team of world-class engineers works day in and day out to ensure that our systems are always as secure as possible. And while some of the best security engineers work at Tesla, we believe that in order to design and build inherently secure systems, we cannot work alone. We work closely with the security research community to benefit from their collective expertise and diversity of thought.

Continuous product improvement

Tesla pioneered the concept of vehicles that improve and become more capable over time by ensuring that every Tesla vehicle made since 2012 can accept over-the-air (OTA) software updates. These updates have introduced new features and functionality that have made our vehicles smarter, safer and more enjoyable to drive. We have also used the OTA system to ensure that our vehicles are not only as secure as possible when they are delivered, but that they continue to stay as secure as possible throughout their lifetime.

Human rights are core to our mission of a sustainable future

The ethical treatment of all people and regard for human rights is core to our mission of a sustainable future. We believe all businesses within our supply chain have a responsibility to share our respect for human rights. Our human rights policy is the formalization of our commitment to uphold and respect these rights and the values they represent.

We endorse and base our definition of human rights on the United Nation's Universal Declaration for Human Rights (UDHR). The UDHR focuses on dignity, respect and equality, without discrimination, for all people. We are committed to upholding these rights and values throughout our value chain — including with respect to our employees, customers, shareholders, suppliers and the communities in which we operate. We require that our suppliers will also support and promote these values in their own operations and in those of their own suppliers.

Addressing human rights risks is an ongoing effort, involving engagement with our value chain for potential impacts, incorporating input from external stakeholders and reviewing and updating our own policies where necessary. With this understanding, Tesla is committed to addressing any potential human rights issues both within our own operations and those of our value chain.

You can see our full Human Rights policy here.

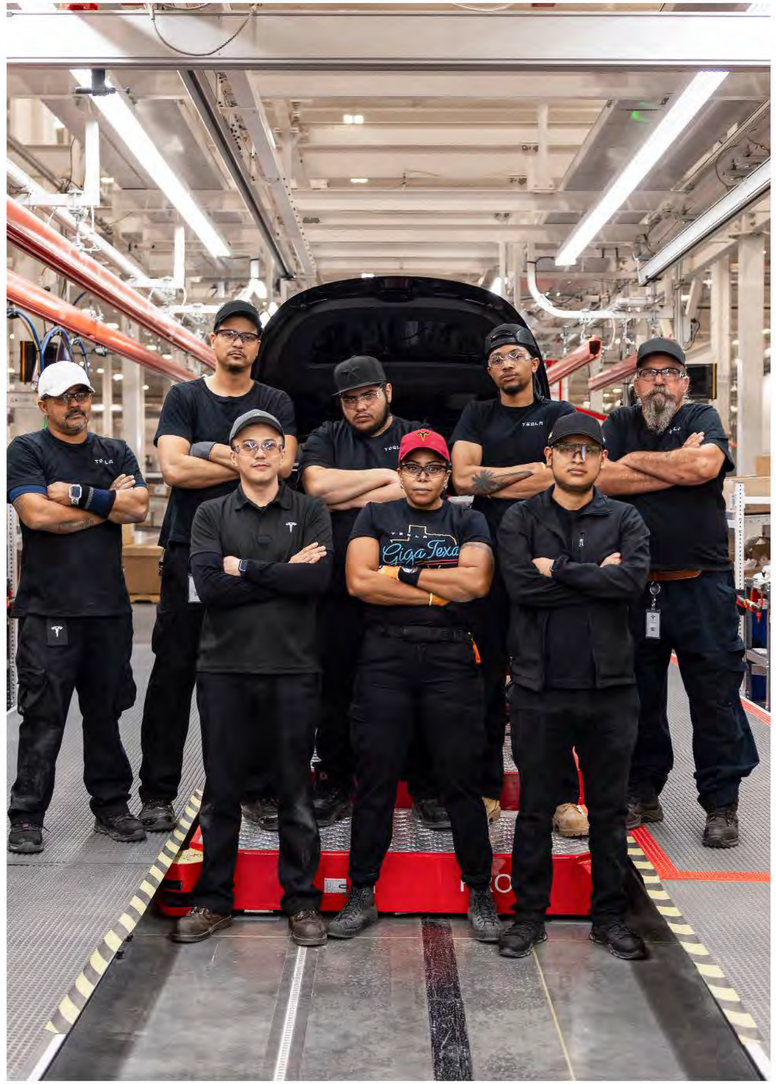
We have a zero-tolerance policy when it comes to child or forced labor and human trafficking by our suppliers

At Tesla, we are committed to ensuring that the way we conduct our business and dealings with our suppliers reflects our values and our belief that everyone should be treated with dignity and respect. Tesla is committed to ensuring that our suppliers do not use slave or child labor or engage in human trafficking. Modern slavery, child labor and human trafficking are crimes under the laws of countries throughout the world, but unfortunately continue to exist all over the globe. Our commitment on this front is summarized in our Supplier Code of Conduct as well as in our Human Rights Policy and Responsible Materials Policy, and we continue to work to ensure that our suppliers uphold the principles in these statements. We look to the Organization for Economic Co-operation and Development (OECD) Due Diligence Guidelines to inform our process and use feedback from our internal and external stakeholders to find ways to continually improve it.

Through our commitment to enforce our Supplier Code of Conduct, Human Rights Policy and Responsible Materials Policy, continuous training and the supplier audit and due diligence efforts, Tesla believes that there is low risk of, and have found no evidence to date of Tesla causing, contributing to or being linked to modern slavery, child labor or human trafficking in our supply chain.

For more information on our commitment to anti-slavery practices and an affirmation of the values we hold and adopt across Tesla's business operations and supply chain, including how we assess risks and effectiveness of our actions, please see our California Transparency in Supply Chain Acts Statement and our U.K. Modern Slavery Act Transparency Statement.

People and Culture



What do we see as impact?

Our employees have gotten us to where we are today. To continue innovating and changing the world for the better, we must ensure we have a talented and engaged workforce with ample opportunity to contribute to our mission and grow professionally.

Meaningful work: Working for Tesla is not just any job. The products we build are necessary for transitioning to a sustainable future.

Respectful, safe, inclusive and equitable workplace: Tesla is a majority-minority company. We strive to be a workplace where people love to come to work every day. While challenges will arise, Tesla has a zero-tolerance policy for harassment of any kind, and we will continue to address them head on as we keep growing.

We hire a lot: We created nearly 100,000 direct new jobs in a decade. While many manufacturers are trimming their operations, we are growing as quickly as is feasible.

Pay well: We want to make sure that we pay competitive wages, regardless of the region.

Significant upside potential: Every single employee of our company can receive their grants in stocks or options. If our company does well, every employee can benefit materially from Tesla's success.

Outstanding benefits: We want our benefits to be an outlier in the manufacturing industry. Among other benefits, we provide medical, dental and vision plans with no paycheck deductions, 401k matching, life insurance, parental leave and family building benefits.

Build the future: Who wouldn't want to work for a company with a mission of building a future we all want? Tesla's mission is not only about making a product that people love, but also about making a real, sustained impact on transitioning the world to sustainable energy. In 2021, we received 3,000,000 job applications from those wanting to be a part of this mission.

People and Culture
Our Plan #1: Attracting

Nearly 100,000 direct jobs in a decade — and we continue to hire extensively

Our employee count has grown ~70 fold over the past decade and, in just over ten years, Tesla has created nearly 100,000 direct jobs. While many companies in the automotive industry have been trimming the number of employees and launching early retirement programs, we plan to grow our employee base for years to come.

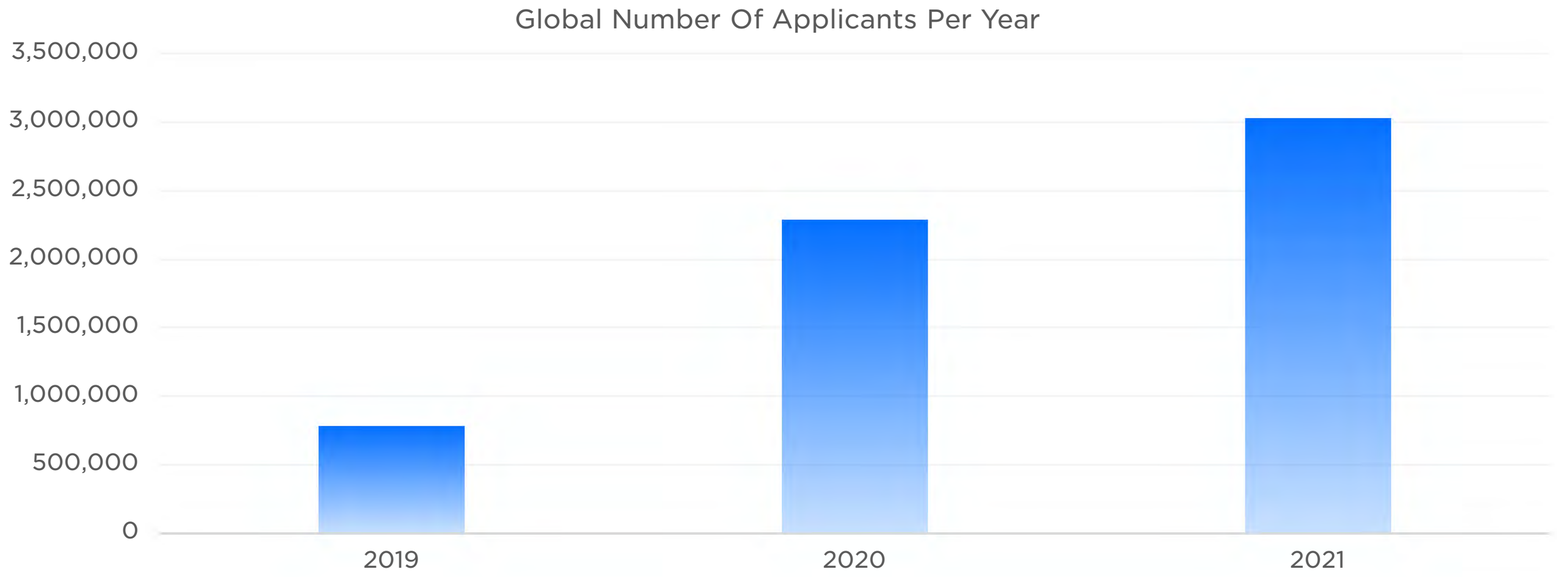
As we are aiming to produce over 20x more cars by 2030 than we did in 2021, we will need to continue to build new factories and hire for those new locations. Gigafactories in Texas and Berlin will recruit extensively starting this year, which means that our job creation will continue to expand for quite some time.

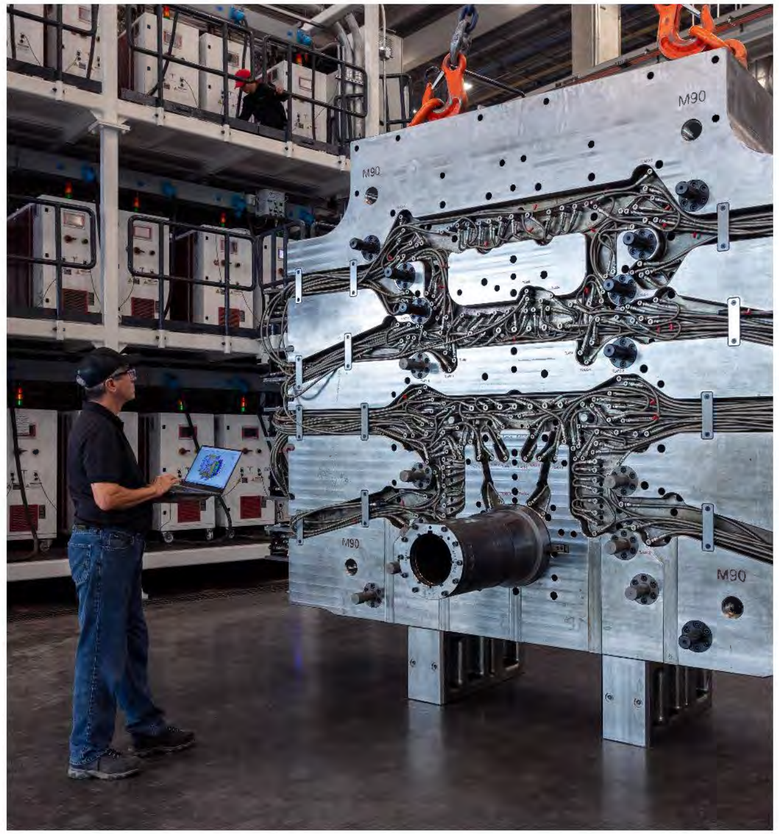
Number of applicants continues to break records

By attracting, developing and retaining excellent talent, we've developed a pipeline of diverse and exceptional candidates while fostering an inclusive culture that supports them once they become employees.

Whether it is through our direct hiring opportunities, internships or workforce development programs, interest in joining Tesla's mission is at an all-time high. We had more than 3,000,000 unique applicants globally in 2021 alone.

We expanded access to hiring opportunities for underrepresented communities by centering diversity, equity and inclusion (DEI) in our hiring process. We did so by increasing gender-neutral language in our job descriptions, broadening our sourcing efforts, revamping interviewing guides, building community partnerships, educating on unconscious bias and facilitating training for recruiters, hiring managers and interview panelists.





Engineers want to work for Tesla

According to Universum 2021 rankings, engineering students want to work for Tesla and SpaceX more than any other organization.

Many successful companies with great engineering can become bureaucratic over time. We don't want to go that route. At Tesla, great engineering ideas worth implementing can come from interns, analysts or executives. We strive to minimize red tape so our engineers can be creative and solve engineering problems that have never been solved.

Ultimately, the long-term success of any company comes down to the pace of innovation. It doesn't matter how far ahead or far behind our technology is, what matters is the pace at which we're evolving, implementing new ideas and engineering solutions. In order to maintain our pace of innovation we must continue to attract the best and the brightest to join our mission.

Top Choice For Graduate Engineers (Universum 2021 Survey)

1	SpaceX	17	General Motors
2	Tesla	20	Ford Motor Company
3	NASA	21	Toyota
4	Lockheed Martin	22	Intel
5	Boeing	26	BMW Group
6	Google	29	IBM
7	Apple	32	Blue Origin
8	Microsoft	33	Honda
9	Northrop Grumman	34	Nvidia
10	Amazon	40	AMD

No university degree required

We are continuing to provide the local community access to thousands of job openings across the U.S. in manufacturing, vehicle service and solar roof installation, offering full benefits and training from day one. We have long stated publicly that candidates do not need to have a college degree to work at Tesla. This represents an enormous opportunity for high school graduates from underserved communities to join us in our mission and grow their careers.

Manufacturing Development Program

This is a two-year program where recent high school graduates in the U.S. start a career at Tesla as a production associate while continuing their education in automation and robotics at a local community college. Since its launch in 2017, we've hired 168 graduates into this program, with active programs at Gigafactory Nevada, Gigafactory New York and our Fremont Factory. We also launched our first Manufacturing Development Program class with Del Valle High School to support Gigafactory Texas in fall 2021.

Tool & Die Apprenticeship

In partnership with local community colleges, Tesla offers a federal and state certified Tool & Die Apprenticeship program in the U.S. at the Fremont Factory, Gigafactory Nevada and Tesla Grand Rapids. These apprenticeships blend on-the-job training by qualified mentors with classroom learning, providing a holistic approach to learning a trade in high demand. Apprentices learn welding, machining, blueprint reading and other critical skills. Similar programs run in Europe, including at the Gigafactory Berlin where we collaborate with local vocational schools and train students via facilitated workshops, self-led modules and on-the-job exercises for a variety of roles.

Introduce a Girl to Engineering Day & National Manufacturing Day

To promote gender diversity in STEM, since 2018, Tesla has encouraged girls to see engineering as a means to pursue their goals by participating in Introduce a Girl to Engineering Day. This year, over 1,200 middle school students from 140 schools across California, Nevada, Texas and New York joined the virtual event which showcased a variety of engineering career pathways and inspiring female Tesla engineers through virtual tours, engaging videos and hands-on STEM activities. Similar initiatives take place in Europe, like Girls' Day, which is dedicated to girls who want to explore future career paths in the industry. Our aim is to encourage and inspire them via factory tour visits and conversations with our female employees and leaders.

Internship program

Our internship program continues to be our driving force in attracting diverse entry level professional talent. In our effort to expand access to our program, we attended more than 75 diversity hiring events targeting women and students of Historically Black Colleges and Universities, Hispanic Serving Institutions, and launched new community Internship Initiatives with Say Yes Buffalo, Breakthrough Austin, TRiO Scholars in Nevada and College Track in the Bay Area to increase diversity in our program.

K-12 education in Nevada

As part of our agreement to build Gigafactory Nevada, we committed to invest $37.5M into K-12 education beginning in 2018. This investment is in partnership with the Department of Education and the Education Gift Fund, with a focus on initiatives that support the acceleration of robotics, STEAM and sustainability programming. To date, $22.5M has been invested across 30 organizations and an additional $17M planned in 2022-2023.

Conference spotlight: Society of Hispanic Professional Engineers

The SHPE National Convention serves as the country's largest annual gathering of Hispanic STEM students and professionals. We met over 3,000 students from various disciplines and had the opportunity to build some great relationships along the way with various SHPE chapter leaders in the country. Tesla's DEI team also participated in the SHPETina series during the conference, which is a program that accelerates and affirms Latina representation at all levels of STEM corporate and academic leadership.

Exceeding comparable manufacturing role compensation

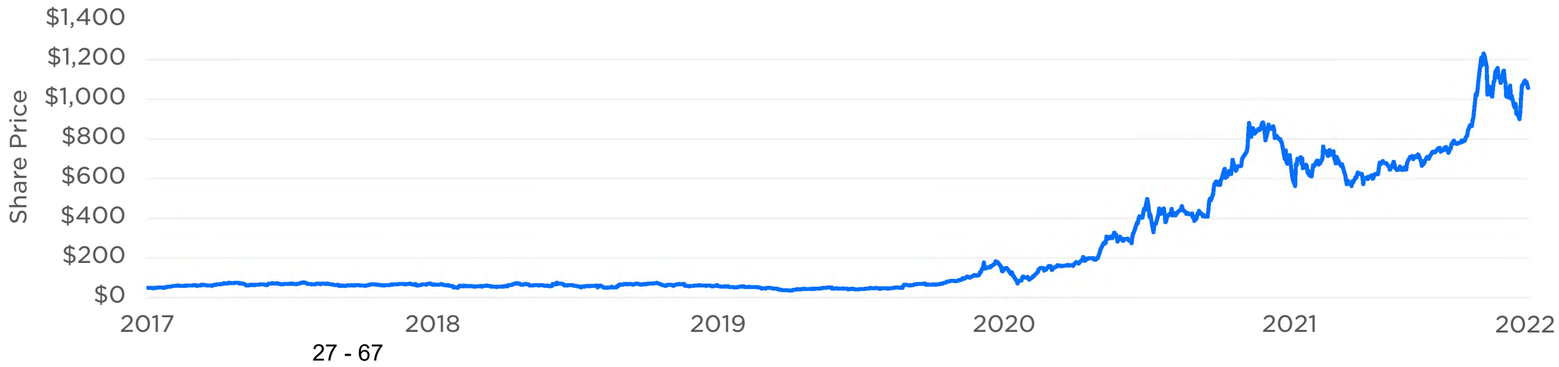
Tesla provides a highly competitive wage that meets or exceeds the wages of comparable manufacturing roles, even before equity and benefits are factored in. In 2021, Tesla's average national wage for manufacturing jobs in the U.S. was $21.60/hour plus benefits (which, among others listed on the next page, includes an option for $0 cost paycheck deductions) and equity, which is a 2.2% increase compared to 2020. According to the Bureau of Labor Statistics, the mean hourly wage for Production Associates / Assemblers is $18.17 and the median is $17.59. Tesla continuously reviews salary and wages against benchmarks and adjusts to ensure wages are competitive. Evaluations for promotions also take place annually.

The impact of stock-based compensation can be material for employees

Our employees have benefited enormously from value appreciation of our stock seen through the years. While share prices will remain volatile and past performance is not indicative of future results, stock-based compensation brings shared ownership to the workforce, and our employees are encouraged to make a positive change for the benefit of all. Culturally, shared ownership of the company is one of the most essential attributes of working at Tesla.

For example, assume that an employee received a grant of 320 Tesla shares in 2018 that vested 20 shares quarterly over 16 quarters (4 years). Based on the stock price at the time of the grant, the quarterly vest of 20 Tesla shares would equate to $1,331-worth of sellable shares at the end of 2018. However, the same vest two years later would equate to $14,113-worth of sellable shares per quarter based on the increase in the price per share of Tesla stock over that period. Employees are also eligible to buy additional stock at a discount through the Employee Stock Purchase Program.

Value Creation at TSLA, Contributed to by 10,000s of Employees, Had Material Compensation Impact



Committed to ensuring pay equity

Tesla HR offers a Pay Equity & Pay Transparency educational course to everyone in the People Organization, with a focus on HR partners and recruiters. This course details what pay equity is, why it is important, how unconscious bias affects pay and hiring, best practices for hiring and compensation, and how each person can be an effective partner in helping the company achieve and maintain pay equity. A recorded version of the course is available to all hiring managers.

We also have an annual pay equity program in place, designed to assess whether similarly situated employees are paid in a similar manner after accounting for a range of variables such as:

- Geographic zone
- Tenure (which determines how many grants are in the process of vesting)
- Average performance score
- Job function
- Management level and role

We want our benefits to exceed standards in the manufacturing industry

We proudly offer comprehensive benefits to support our employees' health and well-being. These benefits allow our employees to choose the level of support that is right for them. We offer no-cost paycheck contributions for medical, dental and vision plan options for employees and family members. We also offer employer-paid life, short- and long-term disability, confidential counseling for employees and their families, employee assistance programs and voluntary benefit programs.

Lastly, we offer student loan and debt consolidation services, transportation subsidies and $0 cost shuttles, back-up childcare, discount programs and tools and resources to support growing families.

People and Culture
Our Plan #2: Compensating

Since 2007, we have provided:

- A $0 paycheck contribution medical plan
- A Confidential Counseling/Employee Assistance Program
- A $0 paycheck contribution dental plan and vision plan
- A $0 cost shuttle service to and from underserved transportation hubs in California and Nevada
- Employer-paid life insurance
- Employer-paid short-term and long-term disability

Since 2016:

- SafetyNet, a benefit that provides limited financial assistance for employees experiencing temporary hardship such as the sudden loss of housing, emergencies/natural disasters or expenses related to the loss of an immediate family member

Since 2018:

- 5 days of back-up child/elder care for employees
- Infertility benefits, including assisted reproductive technologies
- Transgender benefits aligned with the clinical protocol set forth by the World Professional Association for Transgender Health

Since 2019:

- Rethink, a benefit that provides resources for families with children who have learning, social or behavioral challenges

Since 2021:

- An expanded Safety Net program and health insurance offering that includes travel and lodging support for those who may need to seek healthcare services that are unavailable in their home state

Since 2022:

- A benefits concierge service for LGBTQ+ employees
- 401k contribution matching

Parental and family leave benefits

Whether it's family planning or support for employees spending time with their family after the birth or adoption of a child, Tesla provides benefit and leave options to all active full-time employees in the U.S.

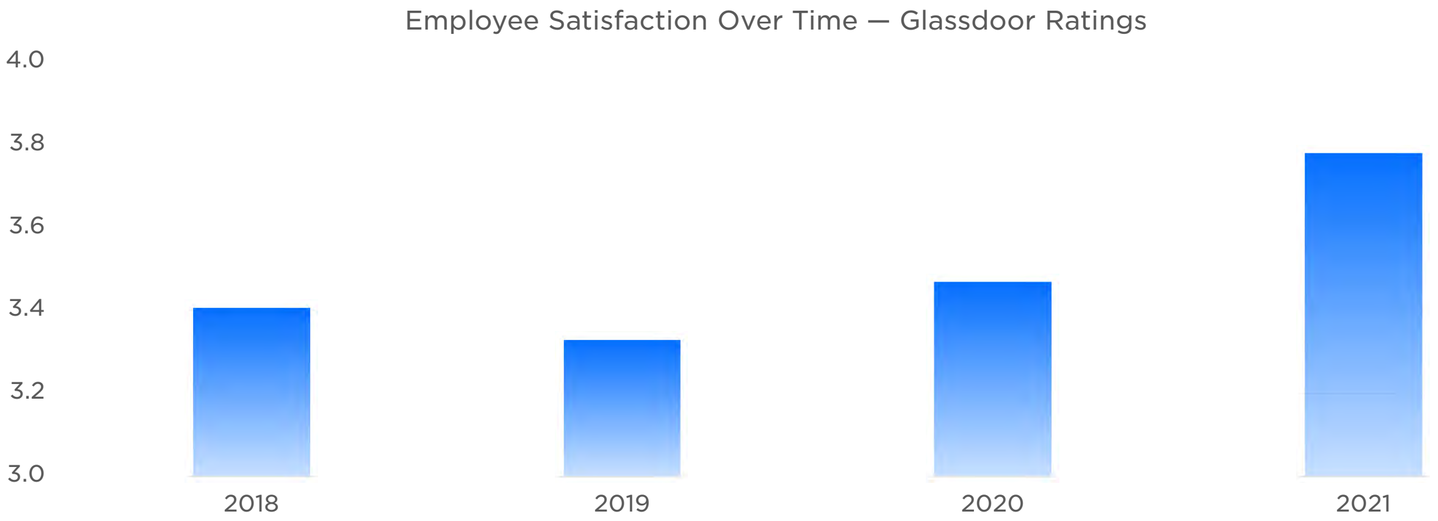
- Fertility Services including IVF, IUI and Egg/Embryo/Sperm Preservations up to $40,000 offered through Kindbody
- Adoption, up to $25,000 offered through Kindbody
- Third-Party reproduction services (donor & surrogacy), up to $25,000 offered through Kindbody
- 16 weeks of Paid Family Leave
- Up to one week of paid time off as a new parent through Tesla Child Bonding. This benefit can be taken following the birth or adoption of a child by an employee, their spouse or domestic partner.
- Six weeks of paid time off for new parents that have worked for Tesla for at least one year (12 consecutive months)
- Disability benefits
- Pay for nine weeks of maternity leave

Employee satisfaction is improving

When going through a challenging period or when the viability of a business is not yet clear, it's likely to have an impact on employee satisfaction. Our early years of Model 3 production and global expansion were some of the most difficult in our history and our employee satisfaction ratings (Glassdoor) reflected that.

Our company is in a different phase now. Model 3 has become the best-selling premium sedan globally and profitability (operating margin) rose to the highest in the industry. This has fueled our ability to expand dramatically and provide career opportunities for many strong performers. Compensation, linked to the performance of the company, also improved substantially in recent years.

There's still a lot of work to be done, predominantly when it comes to work-life balance. Our goals have always been, and still are, bold. Expectations are understandably high as a result. We recently introduced unlimited vacation for salaried employees and added more family benefits. Both Glassdoor rankings as well as our internal data show that our employees are becoming happier as a result of our growing success as well as our expanded employee benefit programs.

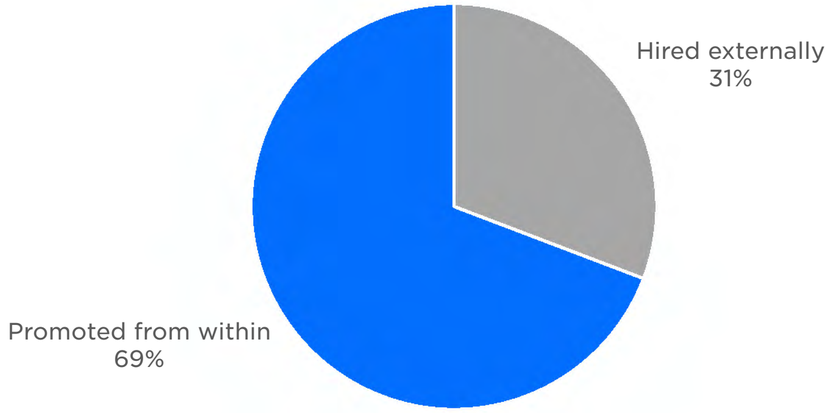


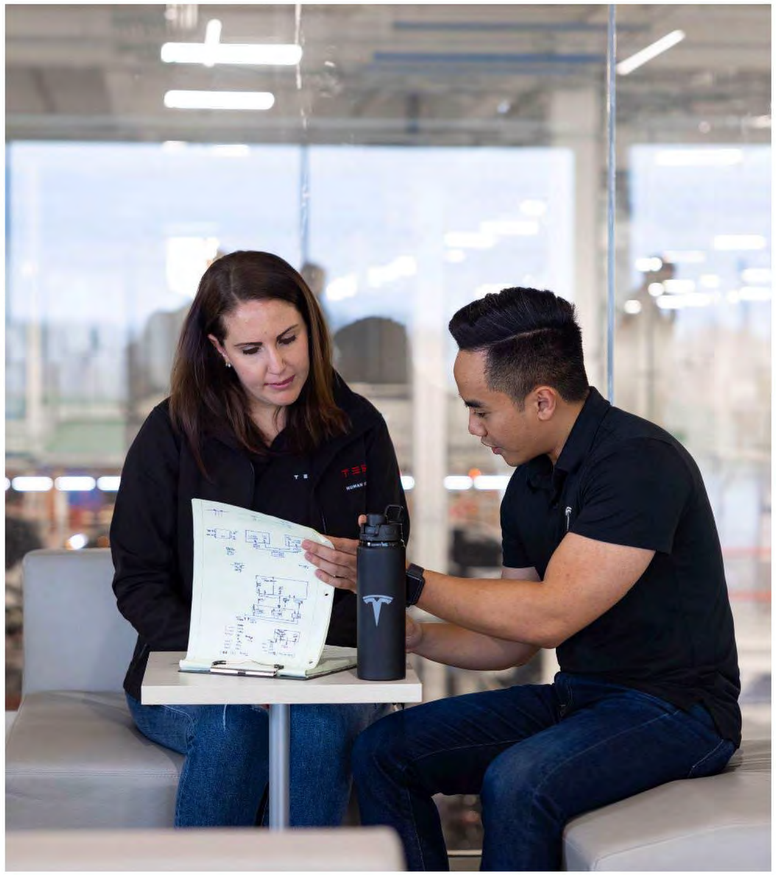
Majority of promotions are internal

We believe our employees should have opportunities without limitations. Employees that start in junior roles can ultimately become company leaders – and many of our long-term employees have done exactly that. Upward mobility in our fast environment is a significant contributor to retaining top talent. We want to make sure that our employees continue to learn and evolve.

As nearly 70% of our leadership is promoted from within Tesla, our employees are surrounded by examples of successful progression. Our global headcount increased by over 40% in 2021. At that pace of growth, some level of external hiring will be necessary. If possible, we do our best to fill each leadership role with an internal candidate.

Breakdown Of New Managers, Executives and Directors in 2021





Integrating Diversity, Equity and Inclusion (DEI) principles and practices into the DNA of our company

In 2020, we instituted quarterly diversity data reviews across different divisions. These ensure that we identify trends across functions instead of simply looking at our workforce at the company-wide level. Executives review organizational demographics and work with their DEI, HR and Recruiting partners to create an action plan to attract, develop and retain talent.

That same year, we also took steps to incorporate DEI principles into talent management. The fundamental pillar in this strategy is consistent and fair performance reviews — a reliable review process leads to more equitable access to internal opportunities. Since 2020, we have routinely delivered performance reviews to over 99% of all employees globally. The program has led to improvements in our internal mobility program and employees' access to career opportunities within Tesla.

We expanded our leadership development team with a focus on providing DEI offerings to all our U.S. employees. Now all employees are introduced to our DEI principles on their first day as part of orientation and can continue their DEI learning journey throughout their time at Tesla. From our allyship resources, to DEI Life Hacks on our DEI Knowledge Center, to virtual instructor led courses on unconscious bias, inclusive interviewing and inclusive leadership, our employees have access to information no matter where they are.

Our Diversity, Equity and Inclusion principles

Our DEI team uses a people-first and data-driven approach to champion diversity, equity and inclusion in our business and in the communities in which we operate. We rely on the following guiding principles:

- Provide transparency in our DEI programs, identify areas of improvement, celebrate successes and continually iterate and improve our DEI approach
- Integrate accountability measures into our business operations
- Focus on sustainable solutions that solve problems at the root cause and reimagine new programs with DEI principles embedded in the design
- Share knowledge throughout all levels of the organization to aid in personal and professional learning and development

Diversity data (EEO-1) for U.S. employees: Tesla is a majority-minority company

We are proud to be a majority-minority company with a large representation of employees from communities that have long struggled to break through the historic roadblocks to equal opportunity in the U.S. As of December 31, 2020, 34% of our directors and vice presidents were non-white. This is a large percentage, considering that just 0.3% of our employees are director level and above at Tesla.

We are working to increase minority representation in professional and management categories through our intentional recruiting efforts with Historically Black Colleges and Universities and Hispanic Serving Institutions, activations at the National Society of Black Engineers, the Society of Hispanic Engineers, AfroTech, as well as community partnerships with organizations like College Track and Black Girls Code. We are also working to ensure that the diversity in our entry-level roles will, over time and because of internal movement, be reflected in our leadership roles.

Job Categories	Total								Male								Female							
	White	Hispanic or Latino	Black or African American	Native Hawaiian Or Pacific Islander	Asian	American Indian or Alaska Native	Two or More Races	**Overall Totals**	White	Hispanic or Latino	Black or African American	Native Hawaiian Or Pacific Islander	Asian	American Indian or Alaska Native	Two or More Races	**Total Male**	White	Hispanic or Latina	Black or African American	Native Hawaiian Or Pacific Islander	Asian	American Indian or Alaska Native	Two or More Races	**Total Female**
Service Workers	42%	30%	6%	2%	16%	0%	4%	**100%**	26%	20%	5%	2%	16%	0%	1%	**70%**	16%	10%	1%	0%	0%	0%	2%	**30%**
Laborers & Helpers	34%	36%	16%	3%	6%	1%	5%	**100%**	32%	35%	15%	2%	5%	1%	5%	**94%**	2%	1%	1%	1%	1%	0%	1%	**6%**
Operatives	26%	31%	15%	3%	19%	1%	5%	**100%**	20%	21%	11%	2%	14%	1%	3%	**72%**	6%	9%	4%	1%	5%	0%	2%	**28%**
Craft Workers	40%	33%	9%	2%	11%	1%	4%	**100%**	40%	32%	8%	2%	10%	1%	4%	**97%**	1%	1%	1%	0%	0%	0%	0%	**3%**
Administrative Support	42%	20%	7%	2%	22%	1%	5%	**100%**	31%	15%	5%	1%	15%	0%	4%	**70%**	12%	5%	2%	1%	7%	0%	2%	**30%**
Sales Workers	52%	19%	10%	1%	12%	0%	6%	**100%**	38%	13%	7%	1%	8%	0%	4%	**72%**	14%	6%	3%	0%	3%	0%	2%	**28%**
Technicians	46%	23%	7%	2%	17%	1%	5%	**100%**	42%	21%	6%	2%	15%	1%	4%	**91%**	4%	2%	1%	0%	2%	0%	0%	**9%**
Professionals	48%	9%	3%	0%	37%	0%	3%	**100%**	39%	7%	2%	0%	27%	0%	2%	**77%**	9%	2%	1%	0%	10%	0%	1%	**23%**
First/Mid Officials & Mgrs	63%	12%	5%	1%	15%	0%	4%	**100%**	50%	10%	4%	1%	10%	0%	3%	**78%**	13%	2%	1%	0%	5%	0%	1%	**22%**
Exec/Sr. Officials & Mgrs	66%	4%	3%	0%	23%	2%	1%	**100%**	55%	3%	1%	0%	18%	1%	1%	**79%**	12%	1%	2%	0%	5%	1%	0%	**21%**
Total	**38%**	**24%**	**10%**	**2%**	**20%**	**1%**	**4%**	**100%**	**31%**	**19%**	**8%**	**2%**	**15%**	**1%**	**3%**	**78%**	**7%**	**5%**	**3%**	**0%**	**5%**	**0%**	**1%**	**22%**

Tesla data are representative of calendar year 2020 – the latest available EEO-1 filing as of the publishing of this report.

Tesla's diversity data (EEO-1) vs. U.S. tech companies

Diversity data requires context. We have compared our diversity data with that of other tech companies. In nearly all categories, Tesla's representation of people of color exceeds that of peer companies.

We are working to increase gender representation throughout the company by supporting women-focused organizations and conferences like Society of Women Engineers, Latinas In Tech, TechUp For Women, Silicon Valley Forum, Women in Technology Festival, Women in Technology International and Women in Manufacturing. We also launched Tesla Recharge Returnship Program – a four-month paid work program that initially targeted women impacted by the pandemic and later expanded to support all mid-career professionals transitioning back into the workforce after a leave of one year or more.

The table below shows Tesla employee distribution compared to average employee distribution of U.S. tech companies. Values that are higher than the tech company average distribution are shown with positive values and green shading. Values that are lower than the average are shown with negative values and yellow shading.

Job Categories	Total								Male								Female							
	White	Hispanic or Latino	Black or African American	Native Hawaiian Or Pacific Islander	Asian	American Indian or Alaska Native	Two or More Races	**Overall Totals**	White	Hispanic or Latino	Black or African American	Native Hawaiian Or Pacific Islander	Asian	American Indian or Alaska Native	Two or More Races	**Total Male**	White	Hispanic or Latina	Black or African American	Native Hawaiian Or Pacific Islander	Asian	American Indian or Alaska Native	Two or More Races	**Total Female**
Service Workers	6%	-4%	-9%	1%	5%	0%	1%	**0%**	3%	-5%	-8%	2%	11%	0%	-1%	**2%**	3%	1%	-1%	0%	-6%	0%	2%	**-2%**
Laborers & Helpers	-39%	27%	6%	2%	-1%	1%	4%	**0%**	-20%	30%	10%	2%	0%	1%	4%	**27%**	-19%	-3%	-4%	0%	0%	0%	0%	**-27%**
Operatives	-19%	16%	5%	2%	-8%	1%	3%	**0%**	-10%	13%	4%	1%	7%	0%	2%	**19%**	-9%	2%	0%	1%	-15%	0%	1%	**-19%**
Craft Workers	-13%	17%	-5%	2%	-3%	0%	3%	**0%**	0%	19%	1%	2%	-1%	0%	3%	**24%**	-13%	-2%	-6%	0%	-2%	0%	0%	**-24%**
Administrative Support	-11%	5%	-3%	1%	6%	0%	1%	**0%**	15%	10%	1%	1%	9%	0%	2%	**38%**	-26%	-4%	-4%	0%	-2%	0%	-1%	**-38%**
Sales Workers	-17%	9%	3%	1%	1%	0%	3%	**0%**	-6%	7%	3%	1%	3%	0%	2%	**10%**	-11%	2%	0%	0%	-1%	0%	1%	**-10%**
Technicians	-8%	10%	0%	2%	-6%	0%	1%	**0%**	-5%	11%	0%	2%	1%	0%	1%	**11%**	-3%	-1%	-1%	0%	-7%	0%	0%	**-11%**
Professionals	1%	3%	-1%	0%	-5%	0%	1%	**0%**	6%	3%	0%	0%	-2%	0%	1%	**7%**	-4%	0%	-1%	0%	-3%	0%	0%	**-7%**
First/Mid Officials & Mgrs	5%	6%	2%	1%	-15%	0%	2%	**0%**	10%	6%	2%	1%	-10%	0%	1%	**9%**	-5%	0%	0%	0%	-4%	0%	0%	**-9%**
Exec/Sr. Officials & Mgrs	-4%	1%	0%	0%	2%	2%	0%	**0%**	1%	1%	-1%	0%	2%	1%	0%	**5%**	-6%	0%	1%	0%	-1%	1%	0%	**-5%**
Total	**-13%**	**15%**	**2%**	**2%**	**-7%**	**1%**	**1%**	**0%**	**-2%**	**13%**	**3%**	**1%**	**-2%**	**0%**	**1%**	**16%**	**-11%**	**1%**	**-2%**	**0%**	**-4%**	**0%**	**0%**	**-16%**

Tesla data are representative of calendar year 2020 – the latest available EEO-1 filing as of the publishing of this report. Competitor data is based on their latest publicly available disclosure. For a detailed explanation of our comparison methodology, please see page 134 of this report.

Tesla's diversity data (EEO-1) vs. U.S. automotive companies

The diversity gap is even more pronounced when compared to automotive manufacturers. In nearly every job category, our employee base is more racially diverse than the automotive industry average. This is partially a function of the location of our factories. That said, our journey towards diversity, equity and inclusion is not finished and we continue to develop programs to make sure our employee base reflects the diversity of our country's population.

The table below shows Tesla employee distribution compared to average employee distribution of U.S. automotive companies. Values that are higher than the Automotive company average distribution are shown with positive values and green shading. Values that are lower than the average are shown with negative values and yellow shading.

Job Categories	Total								Male								Female							
	White	Hispanic or Latino	Black or African American	Native Hawaiian Or Pacific Islander	Asian	American Indian or Alaska Native	Two or More Races	**Overall Totals**	White	Hispanic or Latino	Black or African American	Native Hawaiian Or Pacific Islander	Asian	American Indian or Alaska Native	Two or More Races	**Total Male**	White	Hispanic or Latina	Black or African American	Native Hawaiian Or Pacific Islander	Asian	American Indian or Alaska Native	Two or More Races	**Total Female**
Service Workers	-26%	24%	-14%	2%	13%	-1%	1%	0%	-28%	16%	-14%	2%	15%	-1%	-1%	-11%	1%	8%	0%	0%	-1%	0%	2%	11%
Laborers & Helpers	-21%	27%	-19%	2%	5%	0%	5%	0%	-16%	28%	-10%	2%	4%	0%	4%	13%	-5%	-1%	-9%	0%	1%	0%	0%	-13%
Operatives	-32%	25%	-18%	3%	19%	1%	3%	0%	-24%	17%	-9%	2%	14%	0%	2%	2%	-8%	8%	-9%	1%	5%	0%	1%	-2%
Craft Workers	-45%	29%	0%	2%	10%	0%	4%	0%	-42%	29%	0%	2%	10%	0%	4%	2%	-3%	1%	-1%	0%	0%	0%	0%	-2%
Administrative Support	-29%	15%	-15%	2%	22%	0%	4%	0%	-1%	13%	-4%	1%	15%	0%	3%	26%	-27%	2%	-10%	1%	7%	0%	1%	-26%
Sales Workers	-21%	11%	-5%	1%	9%	0%	4%	0%	-18%	7%	-2%	1%	6%	0%	3%	-4%	-3%	4%	-2%	0%	3%	0%	2%	4%
Technicians	-43%	19%	2%	2%	15%	0%	4%	0%	-41%	18%	2%	2%	13%	0%	3%	-2%	-2%	2%	0%	0%	2%	0%	0%	2%
Professionals	-21%	4%	-5%	0%	20%	0%	2%	0%	-14%	3%	-2%	0%	15%	0%	2%	3%	-7%	1%	-2%	0%	5%	0%	1%	-3%
First/Mid Officials & Mgrs	-14%	7%	-4%	1%	7%	0%	3%	0%	-10%	6%	-2%	1%	4%	0%	2%	2%	-5%	1%	-2%	0%	2%	0%	1%	-2%
Exec/Sr. Officials & Mgrs	-17%	0%	-2%	0%	16%	2%	1%	0%	-13%	0%	-3%	0%	13%	0%	1%	-1%	-4%	0%	1%	0%	4%	1%	0%	1%
Total	-28%	19%	-11%	2%	14%	0%	3%	0%	-21%	15%	-5%	2%	11%	0%	2%	4%	-7%	4%	-6%	0%	3%	0%	1%	-4%

Tesla data are representative of calendar year 2020 – the latest available EEO-1 filing as of the publishing of this report. Competitor data is based on their latest publicly available disclosure. For a detailed explanation of our comparison methodology, please see page 134 of this report.

Veterans at Tesla

Drawing upon unique skills from their service, veterans play an essential role in achieving our goals. With dedicated veteran recruiting resources and professional development opportunities, we prioritize an inclusive and supportive environment for transitioning veterans. Tesla also supports numerous organizations that sponsor veteran hiring and have expanded outreach efforts throughout the country to more military bases and community organizations.

LGBTQ+

Tesla prides itself in being a great place to work for members of the LGBTQ+ community. This is demonstrated by our 7th consecutive 100% Corporate Equality Index with the Human Rights Campaign. Tracking the size of our LGBTQ+ employee base is not a straightforward task for variety of reasons, which is why we will not be sharing specific figures in this report.

Our Diversity, Equity & Inclusion governance

Our DEI governance structure supports our business operations. Our Senior Director of People engages with our Board of Directors to ensure our DEI plans are in alignment with Tesla's strategic objectives. We also integrate our talent management and learning and development into the DEI functional scope to ensure equitable talent, career and learning resources are accessible to all employees. The DEI Director reports directly to the Senior Director of People and has regular engagement with company executives across the company to ensure that DEI principles are embedded into our business. The DEI Director is responsible for all of Tesla's talent management and learning programs.

Diversity of our Board of Directors

The diverse representation on our Board of Directors sets the tone for the rest of the company.

Gender Representation – Tesla Board of Directors	
Female	Male
25%	75%

Underrepresented Communities – Tesla Board of Directors			
13%	13%	0%	75%
Asian	Black	Hispanic	White

Data are representative of calendar year 2021, as measured on December 31, 2021. Totals may not add to 100% due to rounding or individuals who selected "decline to state" or left the category blank.

Connecting communities to opportunities with Tesla

During the global pandemic, we focused a great deal on expanding our community engagement and ensuring our employees stayed connected. Specifically, we expanded our Employee Resource Groups (ERGs) and ensured our programming was accessible in a remote work environment. We welcomed Asian Pacific Islanders at Tesla to our ERG family. While this was a time of uncertainty and change, through our ERGs, we ensured our employees felt more heard and connected than ever before as they pivoted to virtual events to promote inclusion across different locations, physical boundaries and time zones.

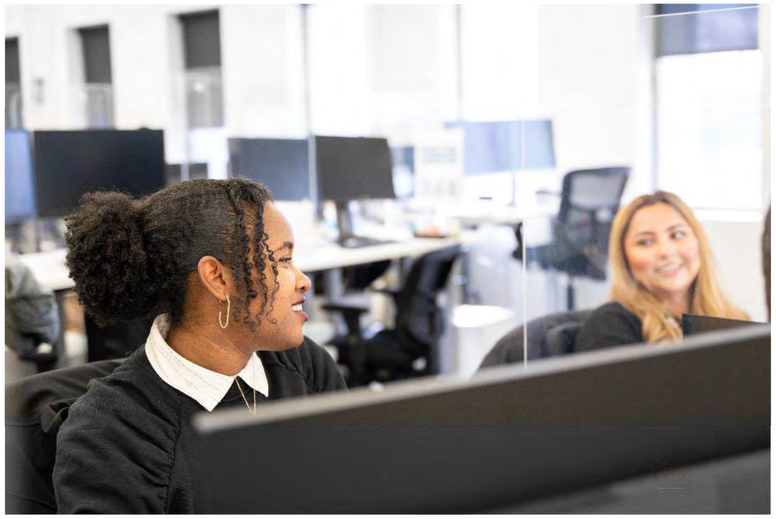
At Tesla, we strive to have a diverse supply chain and create the maximum practical opportunities to provide goods and services as a part of the corporate procurement process. We formalized collaboration between the DEI, Supply Chain and Government Affairs teams to ensure local minority, women, LGBTQ+, disabled and veteran owned businesses are connected to opportunities with Tesla. We recognize that supplier diversity creates a competitive advantage for the company and has a positive impact on the global community. As the supplier diversity program develops, we will implement plans that encourage increased usage of diverse suppliers throughout our organization, partner with internal and external stakeholders to identify opportunities for diverse suppliers and work with external partners to encourage capacity building for diverse suppliers.

People and Culture
Respectful Workplace

We strive to create an environment where people love to come to work every day. With over 100,000 employees as of March 2022, challenges arise, and we address them head on.

In 2021, we re-doubled our efforts to educate employees and managers that any form of discrimination must be reported. While our goal is always prevention, reported complaints of discrimination and harassment are promptly investigated and if substantiated, subject to discipline up to and including termination. New employees receive anti-harassment and discrimination training during orientation. A new employee guidebook was also rolled out which instructs employees to report all forms of misconduct without concern.

As the company continues to hire tens of thousands of workers per year, educating our workforce is a top priority and an ongoing process.



How we're meeting our commitments to equal opportunity employment and a diverse and inclusive environment

We believe it's essential to provide all employees with a respectful and safe working environment where all employees can achieve their potential. As a result, we do not tolerate discrimination, harassment or any mistreatment of employees in the workplace or work-related situations. Below are some of the actions we are taking to ensure the proper treatment of all employees.

Training: Code of Business Ethics and harassment & discrimination training for front-line leaders, HR partners and other employees to understand how to create and promote a respectful workplace, assess situations sooner and escalate appropriately.

Internal Tracking System Enhancement: An enhancement to our internal tracking system now allows HR to document all employee concerns that are raised to ensure there is follow through and resolution for tracking purposes. Additionally, handling concerns at the initial stage helps prevent them from becoming bigger issues. The case management system also allows the appropriate teams to review data to trend and issue spot, which then can lead to proactive solutions before concerns arise.

Internal Mobility: A program that advocates for and provides equal access to employee advancement opportunities and retention with eligibility for opportunities based on standardized performance reviews. Opportunities are advertised on an internal site with career resources in addition to a monthly newsletter. We also offer 1-on-1 support and personal consultations to understand the career aspirations of internal applicants.

Third-party managed integrity line

We encourage employees to raise concerns internally or externally. An employee can raise concerns or complaints to any member of management, Human Resources or Employee Relations (ER). If they prefer to report another way, the Integrity Line is available 24 hours a day, seven days a week. The Integrity Line allows employees to report concerns anonymously and without fear of retaliation.

If any employee raises a good faith concern, HR, together with ER, will ensure that employee concerns are investigated promptly and impartially in a manner appropriate to the circumstances. The Employee Relations team engages in feedback loops with leaders and HR to provide guidance on any appropriate follow-up actions, which range from additional communication and training to corrective action and discipline up to termination of employment.

Why engagement matters for retention

Employee engagement drives productivity, satisfaction and loyalty and plays a critical role in employee retention. Tesla's engagement initiatives strive to make employees feel informed, valued and respected, while company-wide open-door policies with leaders empower employees to make their ideas heard. When we feel connected to the Tesla community and mission, we unlock our full potential as a workforce.

What we are doing to keep employees engaged

To promote engagement, we lead initiatives driven by employee feedback. Throughout the year, we use roundtables, engagement surveys and other feedback forms to gather data and better understand the employee experience.

Our team uses this data to inform our communication strategies. In addition to a monthly newsletter emailed to all U.S. employees and physically posted at manufacturing sites, we launched a new company-wide internal news platform with weekly updates on company news, employee recognition and events.

We highlight business, people and safety updates via both email and an expansive network of video screens. In 2021, we also produced two live and virtual companywide all-hands.

These channels pair with the revitalization of daily Start-Up meetings for assembly workers to streamline communications across the Fremont Factory. HR members also staff on-site Answer Bar kiosks to address employee questions and concerns at many of our office locations.

Engagement requires making resources more accessible. This translates to regular on-site tabling and fairs for benefits, as well as making information available digitally. We manage internal resource websites for product knowledge, employee perks, recognition, employee volunteering, health and fitness and offer virtual info sessions with subject matter experts.

Supporting Ukraine

We are committed to providing disaster relief through product donations. Our relief efforts to the conflict in Ukraine have provided people with the ability to communicate and power communities.

In March 2022, Tesla employees in Europe volunteered to design, prototype and deploy the first 50 kits containing Powerwalls, Gateways and solar inverters to support continued energy access in Ukraine. When paired with one of the 250 solar panels dispatched by volunteers at Gigafactory Berlin, these mini power plants can assist Ukrainian communications and essential services indefinitely by using solar to recharge Powerwalls.

Along with Starlink Terminals used for satellite internet access (made by SpaceX), the kits were shipped to the Ukranian border in Poland, at which point they were transferred onto military trucks. The kit can begin providing power almost instantly, without any tools or technical experience required. With the Powerwall kit alone, a user can power Starlink for five days. With solar panels installed and operational, the kits can provide indefinite power for Starlink Terminal, plus a small appliance or laptop.

Surrounding European countries

In addition to product donations, Tesla has opened free Supercharging at all stations in Poland, Slovakia and Hungary to support those impacted by the recent events. Within hours of implementation, Tesla emailed local owners announcing that several Supercharger stations near Ukraine could be used by Tesla and non-Tesla electric vehicles, free-of-charge.

Hurricane Ida

In the aftermath of Hurricane Ida, Tesla worked with NGO partners such as the Footprint Project, and certified installers in the New Orleans Area (Solar Alternatives, Posigen) to deploy Powerwall and solar panel disaster relief systems. We deployed 14 systems to over 10 sites, including food distribution centers, churches, a warehouse, a fire station, a shelter and command center for NGOs. Most systems stayed in place for six weeks while the grid was down; in cases where the building was too damaged to return power after the grid was back up the systems remained in place for substantially longer. Our partners estimate that these systems provided power to over 1,000 people including recovery workers, food distribution volunteers and first responders.

Kentucky Storms

After the Kentucky winter storms, we deployed two systems at a research and education center in Princeton, Kentucky in partnership with the Footprint Project. These systems helped power communications trailers and mobile offices for over 50 recovery workers. They are still deployed while the center is being rebuilt and we are exploring ways to turn the trailers and mobile offices into a training center for future recovery workers.

Texas Winter Storm

In February 2021, Texas experienced a weather event that caused the widespread loss of power for several days affecting thousands of residents. Tesla provided a disaster relief system to Pathways Youth & Family Services, Inc., a non-profit social service organization providing foster care, adoption and behavioral health services to communities across Texas. The system consisted of four mobile Powerwall units (for a total of ~100kWh of batteries and 40kW of power). With this system, Pathways was able to restore heat and power to its facilities, enabling it to resume housing and other social services to children.

In 2021, our focus remained on protecting people, the planet, our property and products. We were able to improve our performance in Environmental, Health, Safety and Security (EHS&S) by turning to the experts in Tesla – our own employees. We evolved the way we define safety, developed internal tools to drive execution, actively sought worker improvement suggestions and established a more structured EHS&S audit program to identify safeguards and drive operational excellence throughout all areas of the business.

Our EHS&S strategy remains focused on three pillars:

1. Do the Basics Right | 2. Engage and Empower Our Stakeholders | 3. Reduce Risk

Changing how we define safety and build capacity: Human and Organizational Performance (HOP) and Operational Learning

As we grew and evolved as an EHS&S organization, so did our view of safety. The Human and Organizational Performance (HOP) and Operational Learning group was developed in 2021 to integrate our new view of safety into the organization.

In an ever-changing and dynamic work environment, we recognized the need to focus on creating the ability to fail safely. Creating the ability to fail safely is comprised of three components:

1. Engaged workers: workers who are connected to and care about the work they do. When workers are engaged, they are more likely to identify and communicate vulnerabilities in the system.
2. Agility: the ability to continuously navigate and adapt in an ever-changing, complex and dynamic work environment.
3. Safeguards: the hardware, software and human actions that directly prevent an event or mitigate a bad outcome.

Instead of defining safety as the absence of accidents, we define safety as the presence of capacity. Capacity can be defined as the ability to mitigate outcomes and reduce system brittleness.

48,779 submissions
72% of submissions closed with action

TAKE CHARGE

Meet Sherry Ihrig – Take Charge Champion

Develop tools to drive execution of EHS&S — MyEHS

In order to build capacity and allow our workers to fail safely, we needed a more dynamic approach to how we collect and manage data that allows us to make decisions that reduce risk. In response to that need, we developed an internal EHS&S tool named MyEHS to help drive execution and improve outcomes by allowing the intake and visualization of data globally. We designed and deployed 11 modules in 2021, allowing us to better manage our EHS&S information, identify emerging risks and take action to implement improvements suggested by our employees.

Foremost in this effort was our improvement suggestion module — Take Charge. Combined with Action Tracker, this module allows workers to submit improvement suggestions in various categories, including environment, health, safety, security, people and accuracy, while connecting with their supervisors and other work groups to identify and implement solutions to improve the presence of safeguards.

Take Charge case study — Sherry Ihrig

Leading the way with Take Charge submissions is Sherry Ihrig, with over 1,800 improvement suggestions to safety, processes, cost-savings and more since the program's start in early 2021.

"Tesla promotes the concept that 'safety is a shared responsibility,' and the Take Charge program truly empowers me to take a more active role in sharing that responsibility," Ihrig said.

"The Take Charge program encourages associates to increase their awareness of the work environment," Ihrig said. "When these and other potential safety hazards are noticed and resolved, it allows associates to improve their overall work performance."

While Ihrig has enjoyed many parts of her experience at Tesla, from teaming up with "hardworking, outgoing individuals" to learning how to operate a fire extinguisher in emergency response training, the most exciting part has been the Take Charge program.

Engaged employees like Sherry help Tesla build capacity to ensure safeguards are in place and functioning, so that when we fail, we fail safely.

COVID-19 response

Since the emergence of COVID-19 in 2019 and the subsequent variants, we have proactively protected our workers. Teams have contributed to country, state and local regulations to ensure the voice of industry was represented in the drafting and implementation of policies.

Our pandemic management team continues to engage with employees at all levels. We consistently re-examine operations through risk assessments as a key element for managing the ever-changing COVID-19 work environment. Our dedicated Infectious Disease Team aggressively monitors on-going changes across the world to stay healthy and compliant with the differences in localities.

Stats:

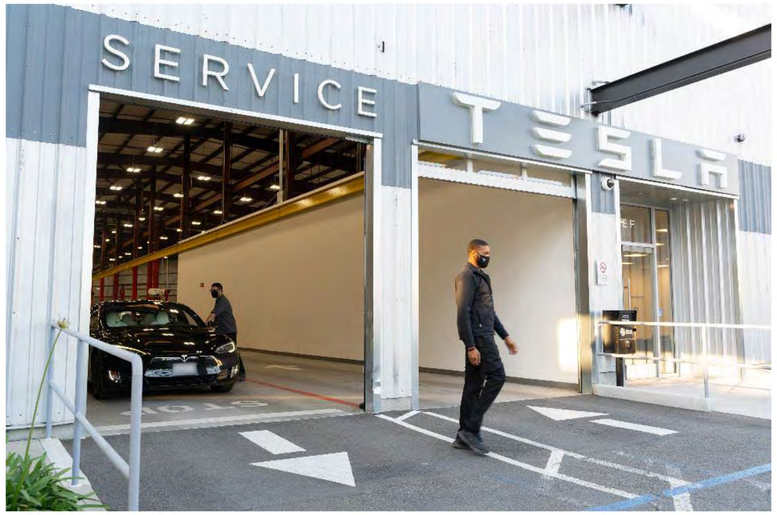
- Conducted 59 free, on-site COVID-19 vaccination clinics
- Administered 14,811 COVID-19 vaccinations
- Received vaccination and booster information from 48% of employees using our internal tracking system, helping monitor progress
- Gifted employees $86,500 in cash and prizes to encourage vaccinations

Compliance & Audit Group Established

We established the Compliance Audit Program in 2021 to provide an objective assessment of the management of EHS&S risk at a site level throughout the various businesses. We have conducted 31 audits so far that:

- Focused on compliance with Tesla EHS&S standards and regulatory requirements
- Engaged site-level EHS&S professionals to audit other Tesla sites, maximizing technical knowledge across the businesses
- Identified best practices that can be replicated across other sites
- Provided guidance and assistance to sites addressing and closing out corrective and preventive actions

The audit outcomes provided opportunities for workers to identify and employ improvement solutions, adjust to the changing work environment where necessary, verify and validate existing safeguards, and implement new safeguards and improve our overall capacity.



U.S. Occupational Safety and Health Administration (OSHA) Voluntary Protection Program (VPP) application accepted in GF Nevada

Gigafactory Nevada became the first Tesla site to have a Voluntary Protection Program (VPP) application accepted. VPP is an OSHA program that recognizes employers in the private industry who have implemented effective safety and health management systems and maintain injury and illness rates below national Bureau of Labor Statistics averages for their respective industries. Next step will be a rigorous onsite evaluation by a team of health and safety professionals in May 2022.

Security

Security of our people, the planet, our property and products continues to be a core factor to enable production execution and build capacity throughout our entire organization.

Our manufacturing locations have dedicated physical and technical security teams, while at our service centers and remote sites, we augment physical security with our SHIELD ambassadors. SHIELD is Tesla's Security Ambassador project that helps increase security awareness at all Tesla locations, especially those without an on-site security team.

The Tesla SHIELD program is designed to educate individuals with the basic security requirements for their building, to allow them to present the issues to their site manager for resolution and be able to escalate larger issues to the Security Team for support.

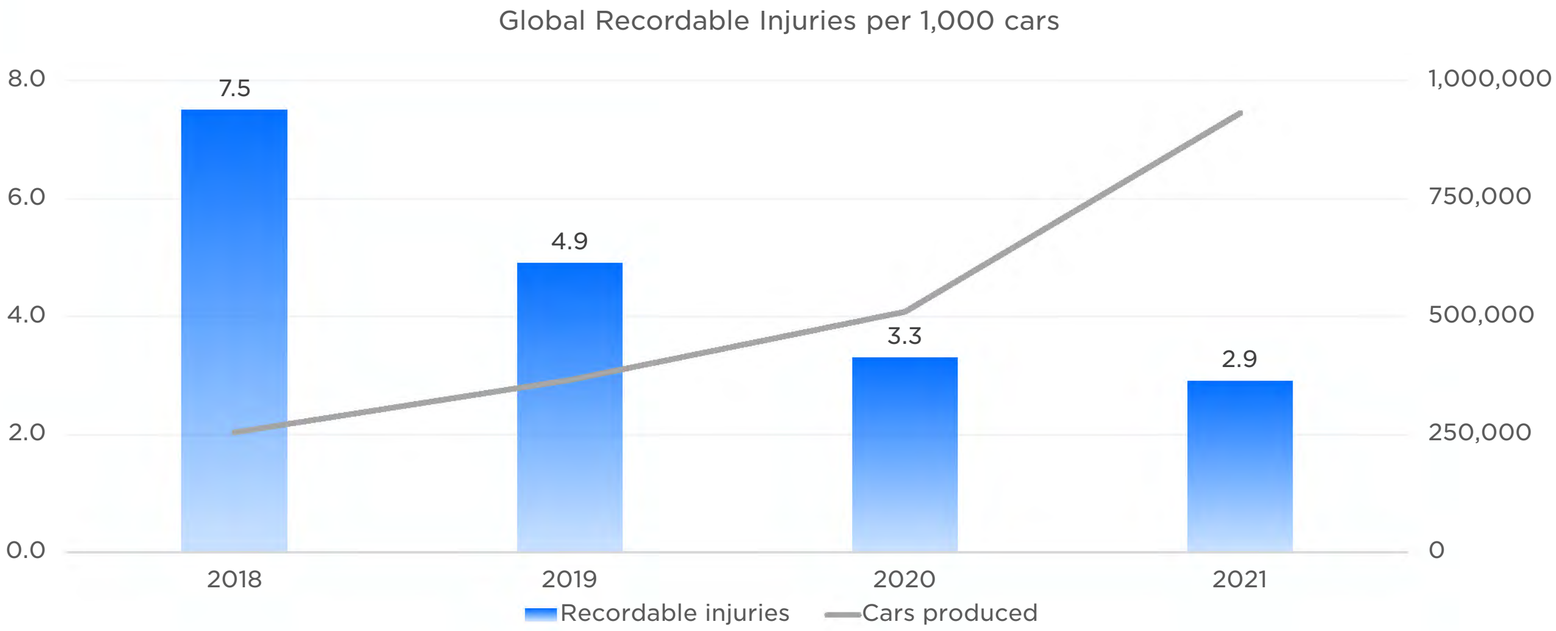
- 271 Security SHIELD Ambassadors registered at 176 locations across 24 countries to help support on-site security needs
- 37,154 workers trained in basic security and awareness courses

As our production volumes increase, focus on safety remains strong

As we continue to increase production, our focus remains on maintaining positive safety records. We examine our safety data to identify emerging risks, comparable events for innovative solutions and to better understand how we can systematically improve across our highest risk areas to help keep our people, the planet, our products and property safe.

We have turned our attention away from traditional OSHA metrics, but we continue to maintain information on them for regulatory purposes. We use these metrics, amongst many others, to examine how how we can see the results of our commitment to safety.

This will be the last year that we present recordable injuries per car produced – which captures all injuries and illness regardless of their severity or relation to work. Instead, we will use the American Society for Testing and Materials (ASTM) standard E2920-19. ASTM better represents our global reach and more clearly illuminates serious injuries and illnesses, allowing our focus to remain on preventing and mitigating outcomes of our highest-risk activities.

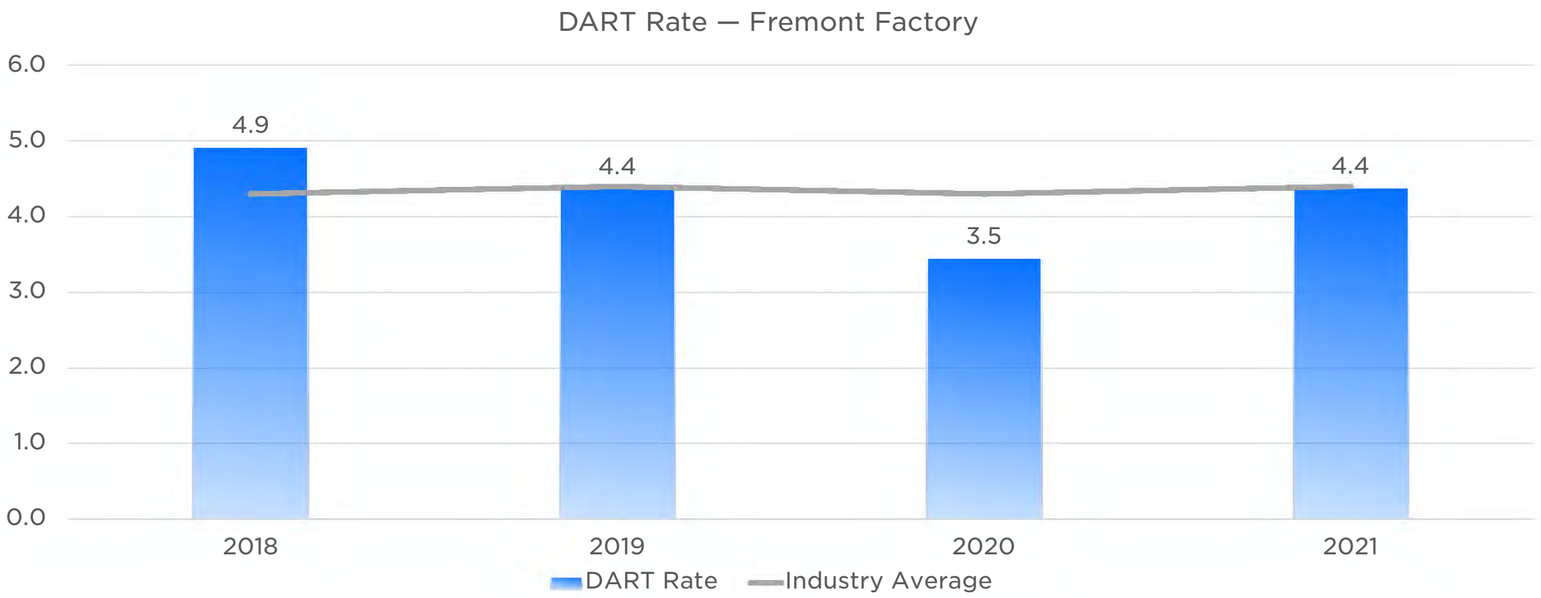


Fremont Factory DART rate stays below industry average

As our manufacturing footprint expanded into Austin and Berlin, and our Shanghai location accelerated production, Fremont continued with the unwavering manufacturing of all Tesla cars.

Fremont Days Away, Restricted or Transferred (DART) rate has remained below the North American Industry Classification System (NAICS) average for automobile manufacturing for the previous three years and continues to drive performance through the integration of safety in design and the verification and validation of safeguards.

In order to concentrate on the events that matter most, we have made great efforts to increase our focus on events of significant consequence. We continue to track and report on OSHA statistics for our U.S.-based sites, such as DART rates for more serious injuries/illnesses, but we are shifting our view to be more forward thinking and globally inclusive.

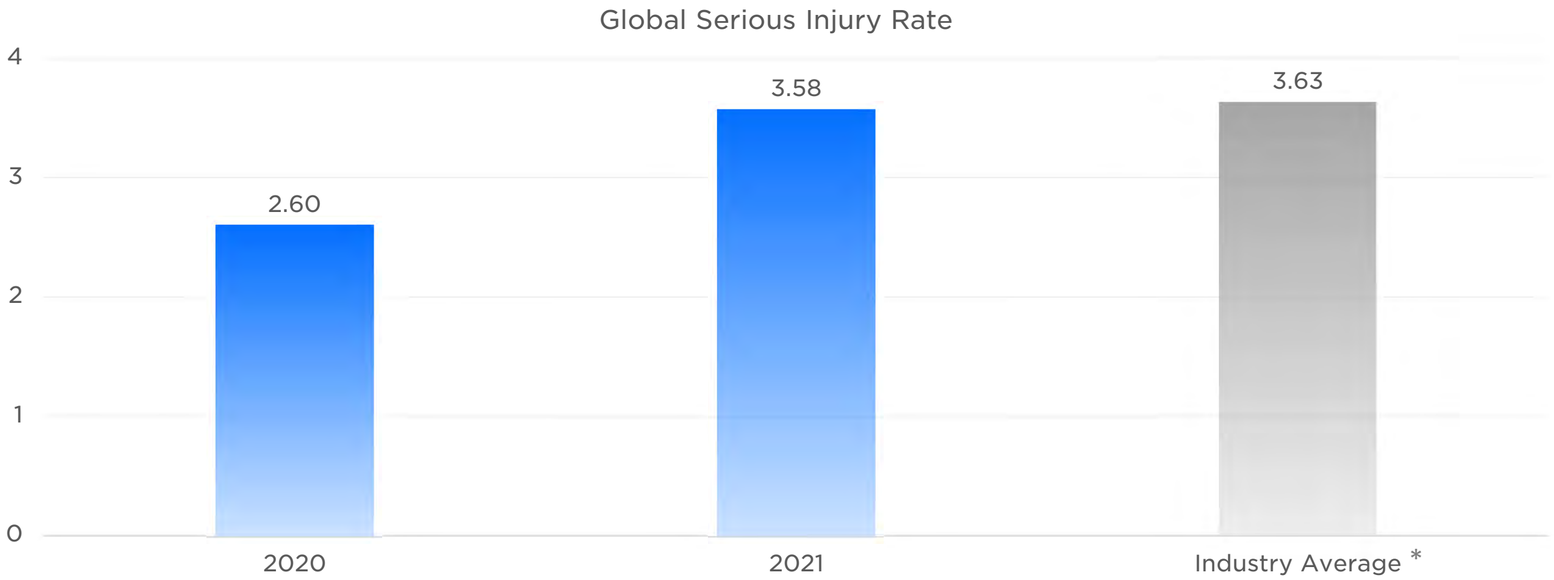


How we measure success globally — prevention of serious injuries and fatalities

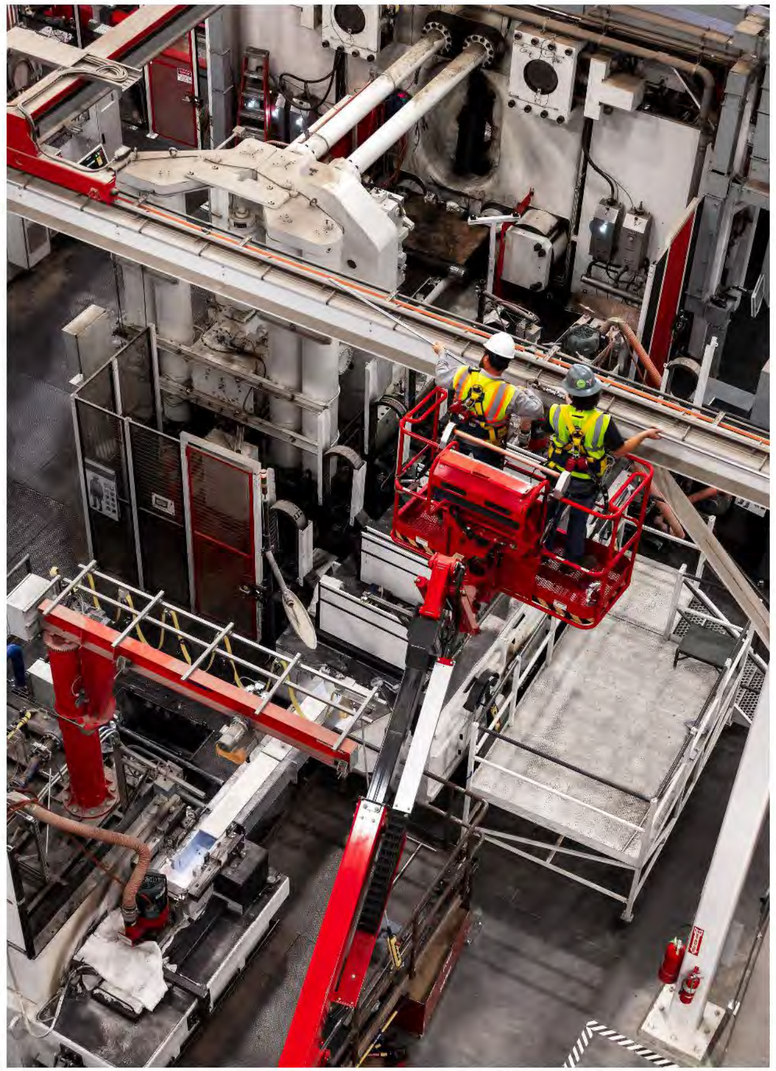
We transitioned to the ASTM standard E2920-19 as our global metric in 2020 to better reflect our global presence and have an increased focus on serious injuries and illnesses. Other automakers have not yet adopted this standard, so we are benchmarking against other manufacturing and service industries. We made this change in response to studies indicating the statistical invalidity of previous metrics (Total Recordable Injury Rate [TRIR]) as measures of safety outcomes.

We continue to concentrate our prevention and mitigation efforts in our highest risk areas across all lines of business and are accelerating forward with our strategies to ensure essential safeguards are in place and functioning. In 2020, COVID–19 impacted our operations including the shutdown of the Fremont Factory; therefore, we are using 2021 as our baseline year.

Sadly in 2021, Tesla experienced a fatality which occurred during a vehicle test drive outside of the U.S. Extensive global actions have been implemented based on our operational learning including limiting speeds and designated test drive routes.



*Industry Average data is taken from manufacturing/service industries submitted to ORCHSE/NSC for the years 2019 & 2020



Constructing Our Future

In 2021, we kicked off our Constructing Our Future initiative that focused on empowering our project teams and partners to accelerate contractor onboarding as well as to simplify our requirements to ensure work is conducted safely and effectively.

Rather than uploading a Job Hazard Analysis (JHA) completed off-site, contractors and suppliers are now expected to meet a Tesla Responsible Person and EHS&S professional at the location of work to complete a Pre-Work Risk Assessment.

Over 5,000 companies were onboarded, and 587 Tesla Responsible Persons (TRP) and Contractor Responsible Persons (CRP) were trained in the new process. This level of involvement resulted in increased contractor responsibility, improved communication and more thorough Pre-Work Risk Assessments, which identified critical and high-risk activities.

Shifting from a hazard-based approach to a risk-based approach provides a better opportunity for EHS&S success by discussing critical and high-risk operations.

In addition, we support the Constructing Our Future with written procedures, training resources and forms which are easily accessible to Tesla stakeholders. This strategic approach helps us create the framework necessary to build safely, efficiently and consistently.

We are on schedule to release the new and improved supplier and contractor onboarding and management system, Workforce Management, in the second quarter of 2022. This simple, scalable, centralized system will build on the efficiencies of the interim onboarding process and provide better visibility for managers and engineers to track performance.

We will report our contractor injury rates in the 2022 Impact Report.

Environmental Impact

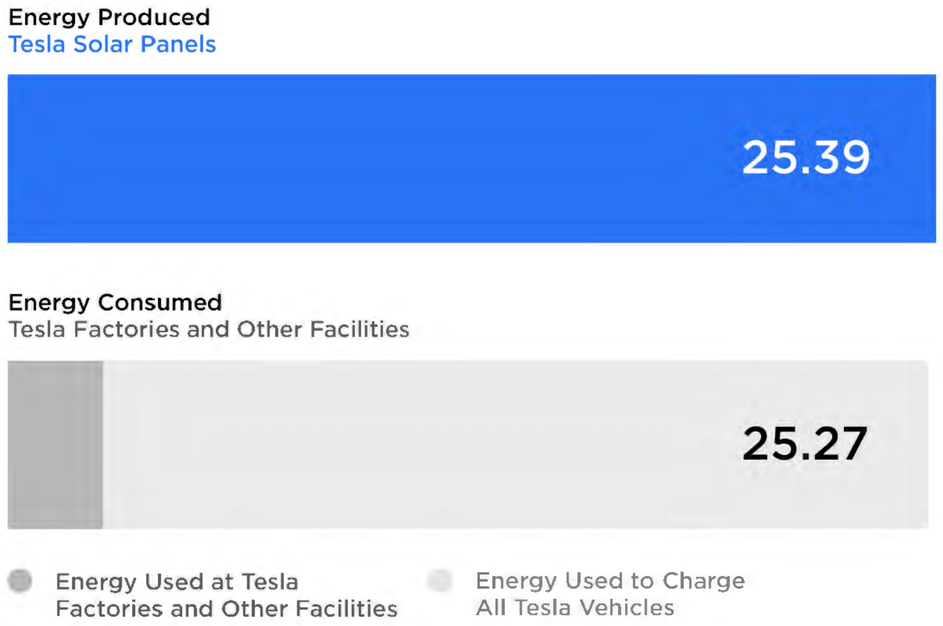
What Do We See As Impact?

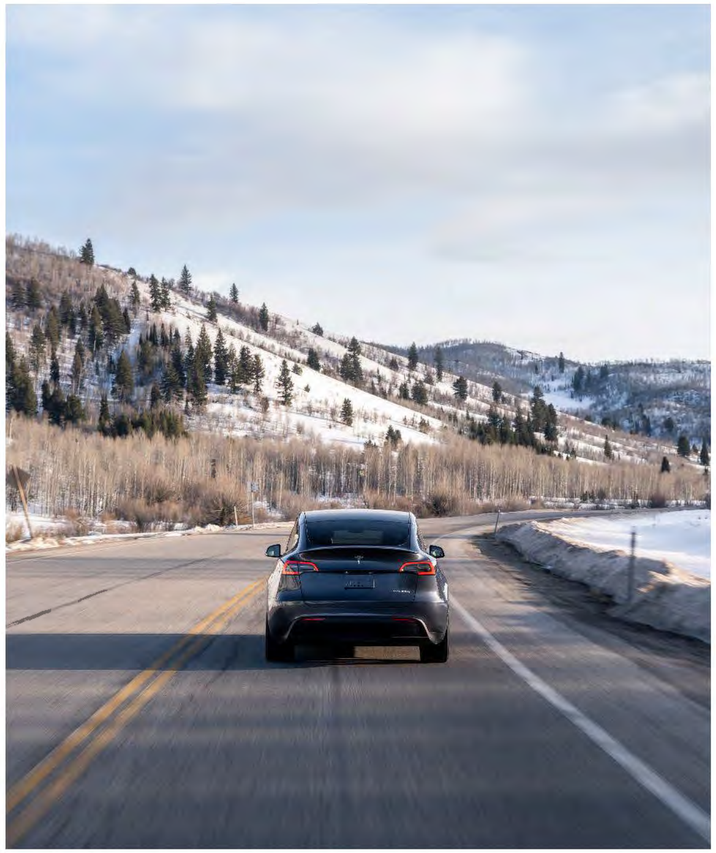
The biggest environmental impact is achieved through early displacement of ICE vehicles and replacing them with EVs. Additionally, we want to displace fossil-based energy generation with renewable energy generation.

As of the end of 2021, Tesla (including SolarCity prior to its 2016 acquisition by Tesla) has installed almost 4.0 Gigawatts of solar systems and cumulatively generated over 25.0 Terawatt-hours (TWhs) of emissions-free electricity. For reference, that is more energy generated by our installations than the total energy Tesla has used to run all our factories since we began producing Model S in 2012 and electricity used to power all of our vehicles in that same period combined.

We are striving to always remain a net contributor to renewable energy generation. It is our goal to eventually have all our manufacturing energy needs satisfied through renewable sources where possible. Additionally, we are hoping to see more Tesla vehicle customers installing solar panels or Solar Roof along with a Powerwall to meet their own energy needs in a sustainable way.

Energy Generation vs. Energy Consumption (in TWh)





6,500 miles

The manufacturing process of Model 3 and Model Y currently results in slightly higher GHG emissions than an equivalent combustion engine vehicle. However, based on the global weighted average grid mix, Model 3 and Model Y have lower lifetime emissions than an equivalent ICE after driving 6,500 miles.

In addition to an updated Lifecycle Analysis (LCA) for Model 3 and Model Y, we are reporting total Scope 1 and Scope 2 emissions and use-phase emissions of our vehicles

In this year's report we are reporting our Scope 1 (direct emissions from our facilities) and Scope 2 (purchased electricity, heat, etc. for our facilities) emissions resulting from global operations. This information is not only important to benchmark our performance against other manufacturers but is also the first step to track progress as we continue to work to decarbonize our own operations. While the most important work we can do to reduce GHG emissions is through selling as many of our products as possible, we are also committed to reducing carbon emitted from our own operations longer term. This is not only the right thing to do, but it also makes business sense as we reduce the resource intensity of our processes.

It is possible to fully decarbonize the manufacturing and use of EVs – this is economically unfeasible for ICE vehicles

We are often asked if electric vehicles (EVs) are more sustainable than internal combustion engine (ICE) vehicles. The environmental impact of zero-emission transport and energy products, like the products that Tesla produces and sells, is undeniably more positive than the GHG-emitting alternatives. This becomes more pronounced when determining the lifetime impact of EVs versus ICE vehicles, which requires looking at the entire lifecycle — from raw materials to use-phase emissions to disposal — and not just at vehicle usage emissions.

Variables often overlooked by other lifecycle studies:

- Using Worldwide Harmonized Light Vehicle Test Procedure (WLTP) or Environmental Protection Agency (EPA) fuel/energy consumption data (both of which overestimate fuel-economy and underestimate emissions) rather than real-world data
- Not considering the higher energy efficiency of Tesla's powertrains
- Assuming the average EV needs a battery replacement at some point in its life (it doesn't)
- Not considering emissions generated through the oil refining and the transportation process
- Using outdated data for the carbon impact of cell manufacturing

*For a definition of Scope 1, 2 and 3 emissions see page 135 of this report.

Lifecycle Analysis of Tesla EVs vs. Equivalent ICE Vehicles

70 tons

Lifetime CO_2e emitted by an average internal combustion engine vehicle (model year 2021) sold in the U.S. through its use-phase, excluding CO_2e emitted during the oil refining phase.

Using only real-world data, not official NEDC, WLPT or EPA[1] consumption data

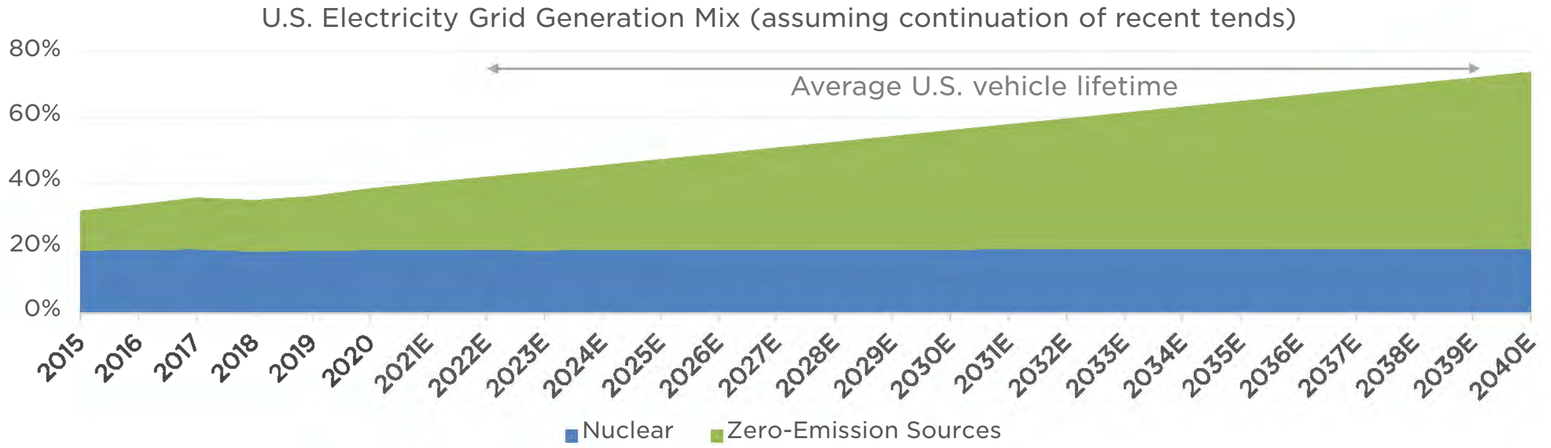
The most important variable in a lifecycle analysis of an automobile is real-world fuel consumption or electricity consumption, as applicable, which impacts the use-phase of the lifecycle. Various efficiency testing cycles such as NEDC, WLTP or EPA do not truly represent real-world fuel or energy consumption. Therefore, we used:

EV energy consumption: Real world energy consumption based on 25 billion miles traveled Tesla Model 3 and Model Y vehicles, including energy losses during the charging process.

ICE fuel consumption: Data provided by Consumer Reports, which reports model year 2020 mid-size premium sedans achieve 24.3 MPG on average. This translates to over 400 grams of CO_2e per mile once we account for emissions generated through the extraction, refining and shipment of oil.

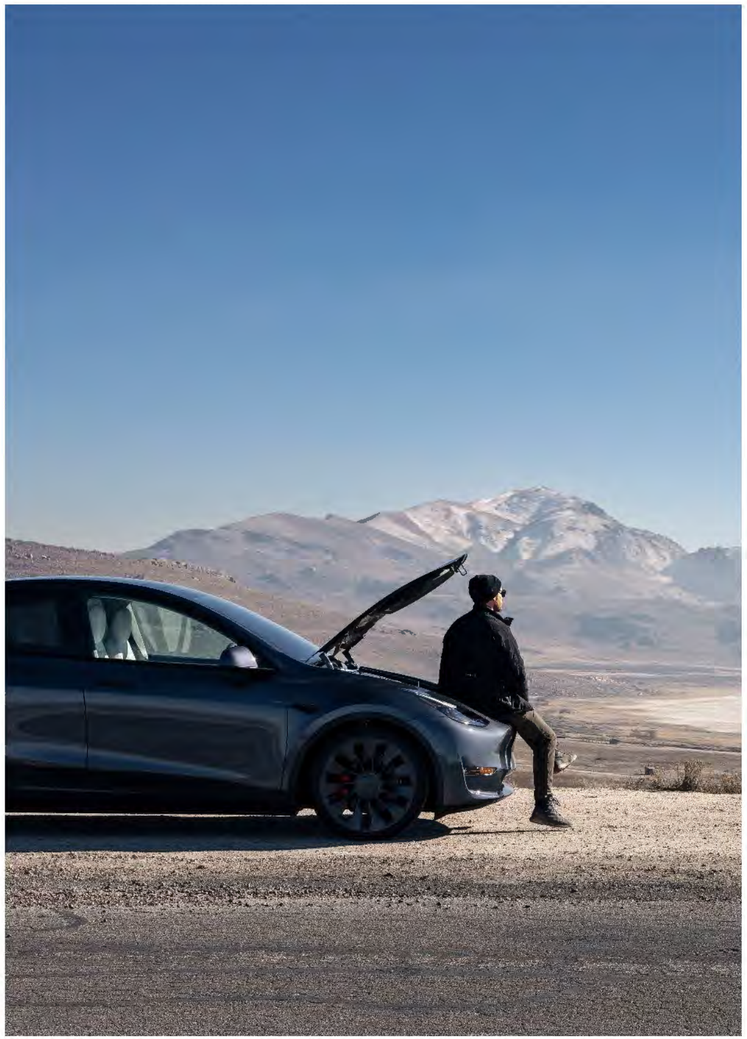
The carbon impact of ICE vehicles remains the same every year of use, but for EVs, it should improve every year

Based on publicly available sales and fleet data, we estimate that an average vehicle in the U.S. is driven slightly less than 12,000 miles per year for about 17 years before it is scrapped. Furthermore, as an ICE vehicle ages, its fuel efficiency only remains stable if serviced properly. On the other hand, electricity generation to charge EVs has become "greener" over time with the addition of cleaner energy sources to the grid. Below, we show zero-emission electricity generation capacity (including nuclear) in the U.S. since 2015. Even without factoring in any changes to federal policy or an acceleration of the adoption of renewables in the U.S. (which is likely), if current trends remain stable, emissions generated through EV charging should continue to decline over time.



[1]NEDC = New European Driving Cycle; WLPT = Worldwide Harmonized Light Vehicles Test Procedure; EPA = U.S. Environmental Protection Agency
[2]2021-2040 Tesla estimate based on recent grid mix shifts. Conservatively assumes no change in federal policy or acceleration of move to renewables in the U.S. for electricity generation.

Lifecycle Analysis of Tesla EVs vs. Equivalent ICE Vehicles



On the following pages, we will show the per mile lifecycle emissions of our vehicles

This includes emissions from upstream supply chain, direct emissions from manufacturing and electricity consumption and use-phase emissions when charged from a grid with a generation mix that reflects the geographic distribution of Model 3 and Model Y deliveries in the U.S., Europe and China. Below are the lifecycle emissions scenarios we show, and the assumptions used in each of the charts on the following pages:

Average Premium ICE: The reference ICE vehicle is based on an average of mid-size premium sedans and mid-size premium crossover SUVs, with a real-world fuel economy of 24.3 MPG.

Model 3/Y* Personal Use (Grid Charged): What emissions per mile could be if a Model 3/Y were principally charged at home from the grid.

Model 3/Y Ridesharing Use (Grid Charged): What emissions per mile could be if a Model 3/Y were used for ridesharing over one million miles using cell chemistry from Tesla energy products, charged from the grid.

Model 3/Y Personal Use (Solar Charged): What emissions per mile could be if a Model 3/Y were principally charged at home using a solar system and energy storage.

Model 3/Y Ridesharing Use (Solar Charged): What emissions per mile could be if a Model 3/Y were used for ridesharing over one million miles using cell chemistry from our energy products and if it were only charged using a solar system and energy storage.

Other assumptions:

- Charging a Model 3/Y using solar panels and a Powerwall adds emissions to the manufacturing phase while reducing use-phase emissions to as low as zero when 100% of charging is done using that system.

- We conservatively assume no additional renewable energy capacity on the grid during the life of the vehicle given the shape of the renewable energy adoption curve is still very much up for debate.

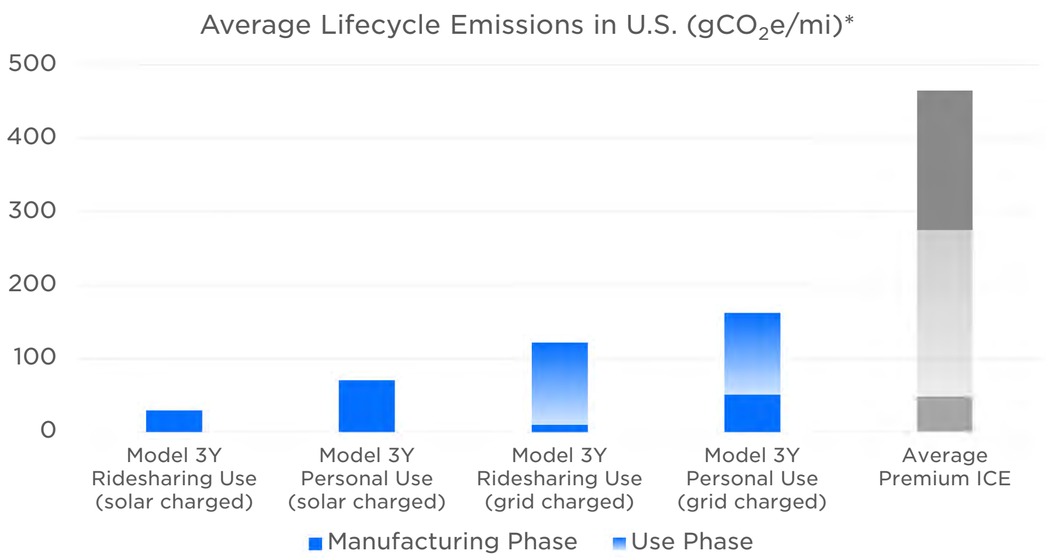
* This year we have added the impact of Model Y to the emissions per mile calculation in our LCA. Given that Model 3 and Model Y have 70%+ parts commonality and share many manufacturing processes their GHG footprints are very similar. We have decided to present the LCA as a weighted average of Model 3 and Model Y based on production share for each vehicle (for manufacturing phase emissions) and delivery volumes in each region (for use-phase emissions).

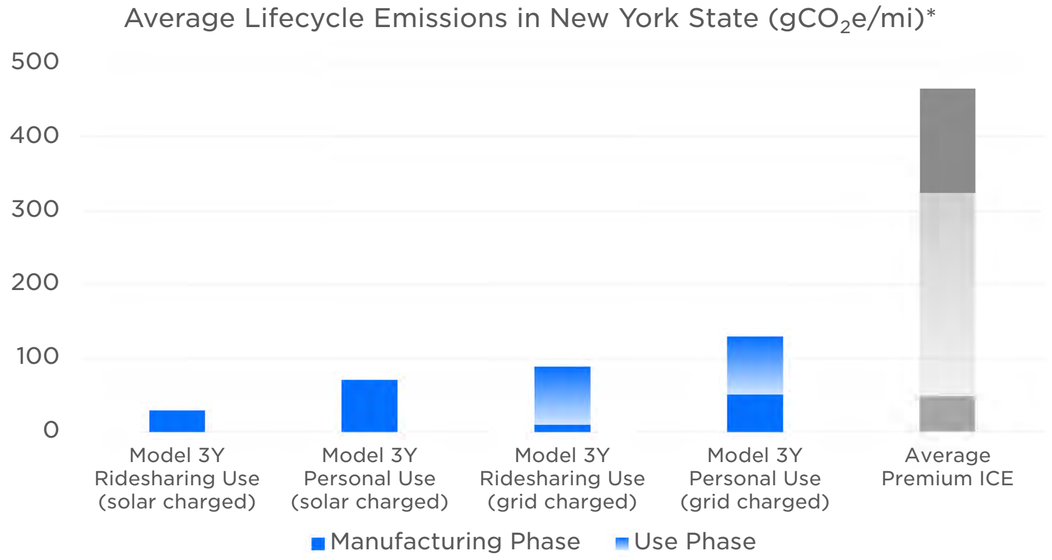
EV vs. ICE Vehicle Emissions per Mile
United States

The electricity grid keeps getting cleaner, while emissions from ICE vehicles do not

To put this in perspective, average GHG emissions from charging one New York-based Tesla vehicle equates to the emissions from an ICE vehicle with a fuel economy of 109 MPG (no such vehicle is on the market). Even when charging a Tesla in Michigan, where approximately 60% of energy comes from natural gas and coal, the emissions from our vehicles still equates to the emissions from an ICE vehicle with 52 real-world MPG (considerably more in terms of EPA rated MPG). As more regions adopt sustainable energy solutions to generate power, emissions related to charging an EV from the grid will decrease even further.

EV customers can increase their renewable energy mix by installing solar panels or a Solar Roof and an energy storage solution, such as Powerwall, in their homes. This dramatically reduces the lifetime carbon footprint of an EV, even when accounting for the carbon footprint of both the solar panel/Solar Roof and Powerwall manufacturing and upstream supply chain.





*gCO2e/mi = grams of CO_2-equivalent per mile driven

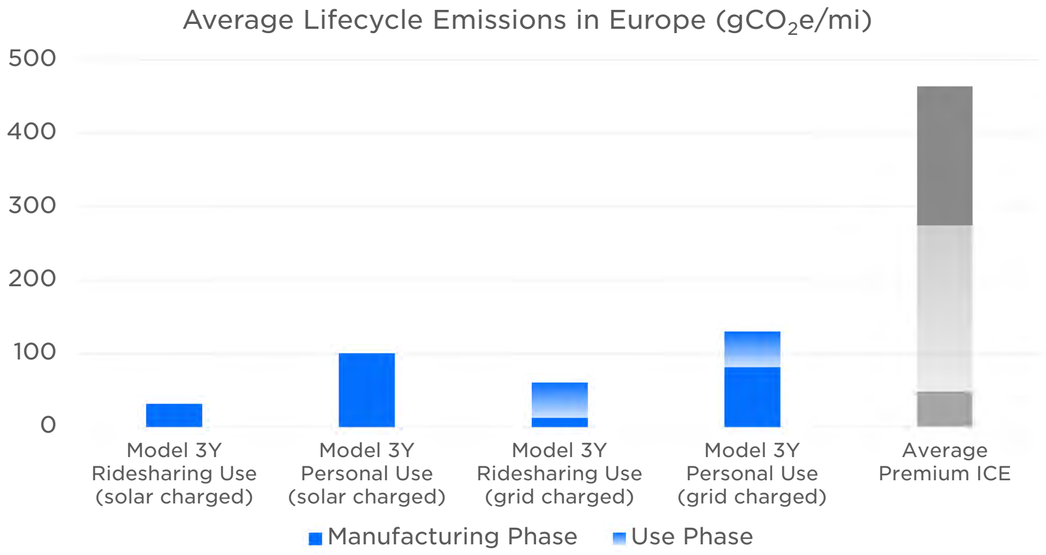
EV vs. ICE Vehicle Emissions per Mile
European Union, U.K. & EFTA

A cleaner grid in Europe means a bigger emissions gap between Model 3 and a comparable ICE vehicle

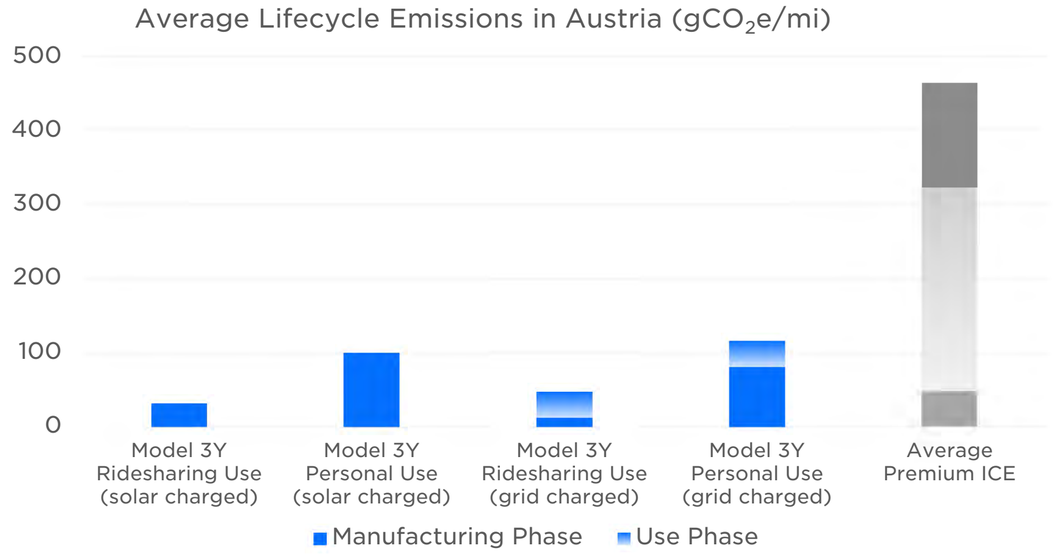
In Europe, the U.K. and EFTA (Iceland, Liechtenstein, Norway and Switzerland), larger portions of energy generation come from either renewable sources or nuclear, which means that in Europe the use-phase emissions gap between ICEs and EVs is even wider than it is in the U.S.

On the other hand, since an average European driver covers fewer miles per year than a U.S. driver, emissions from the manufacturing phase are divided by fewer miles. While in the U.S., an average vehicle covers 200,000 miles before getting scrapped, in Europe, total mileage is closer to 150,000 miles.

We used Austria as an example of how use-phase emissions should evolve once the European grid becomes greener. As seen in the chart on the right, in Austria, all-in lifecycle emissions of a personal, grid-charged Model 3Y are over 3.5x lower than all-in lifecycle emissions of an equivalent ICE vehicle.



Shift to greener grid



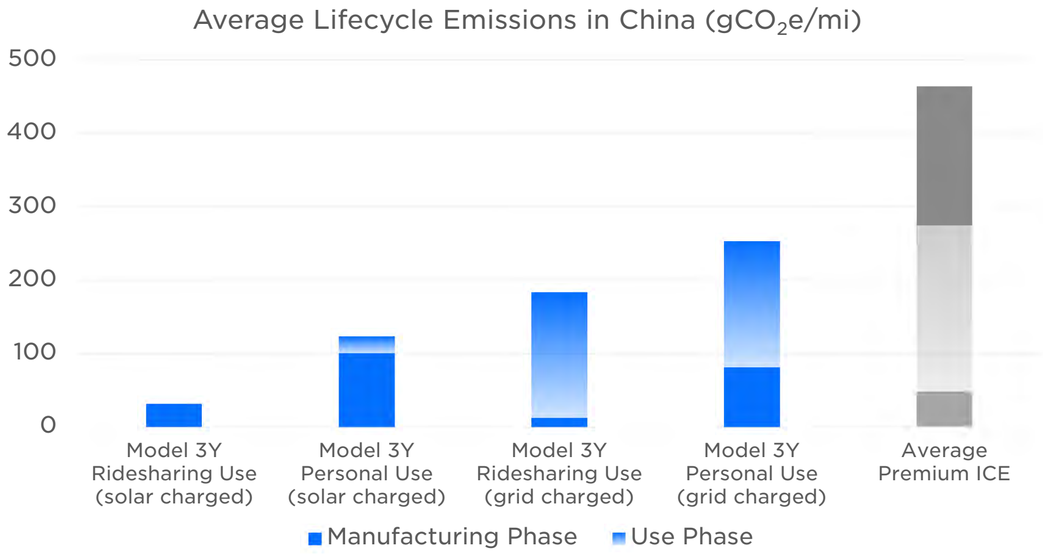
EV vs. ICE Vehicle Emissions per Mile
China

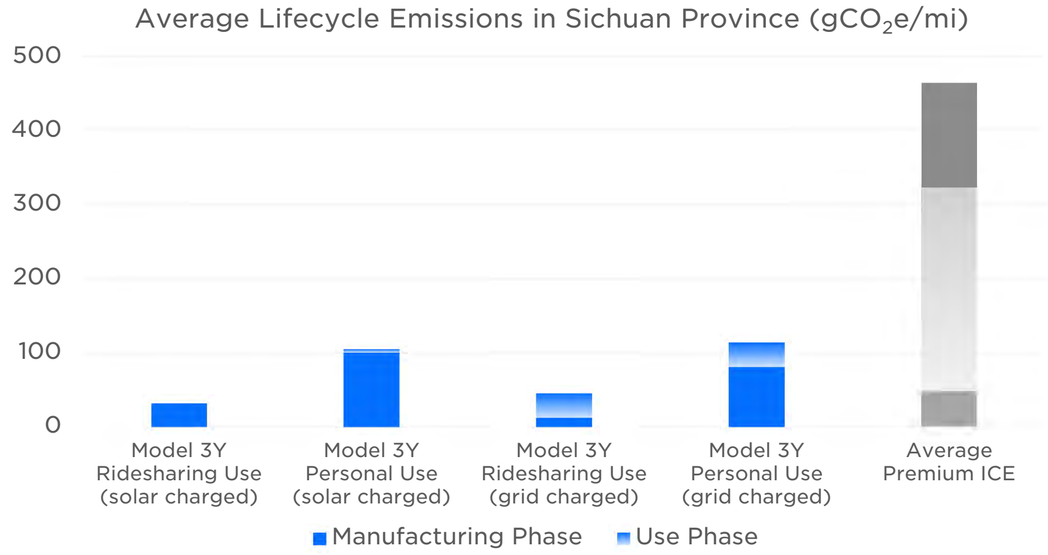
Despite a higher-emissions grid in China, Model 3 still has lower emissions than comparable ICE vehicles

In China, much of the grid is powered by coal. That said, even in this scenario, charging a Tesla Model 3Y from the grid is still less emission intensive than running an ICE vehicle. Just like in Europe, we have assumed a vehicle lifetime of 150,000 miles.

We are expecting the grid mix in China to improve dramatically over time as China remains a dominant deployer and manufacturer of renewable energy. Sichuan Province (with a population of 81 million) is a great example of this. In this province, given the high percentage of renewable energy penetration, charging an EV from the grid is less polluting than charging an EV in most global countries or states.

In conclusion, even as of 2021, charging a Tesla Model 3Y in any of our major markets is more environmentally friendly than burning gasoline. Considering that vehicles are used for 17 to 20 years before getting scrapped, it is reasonable to assume that in the coming years, the gap in emissions per mile between EVs and ICEs will only get wider.





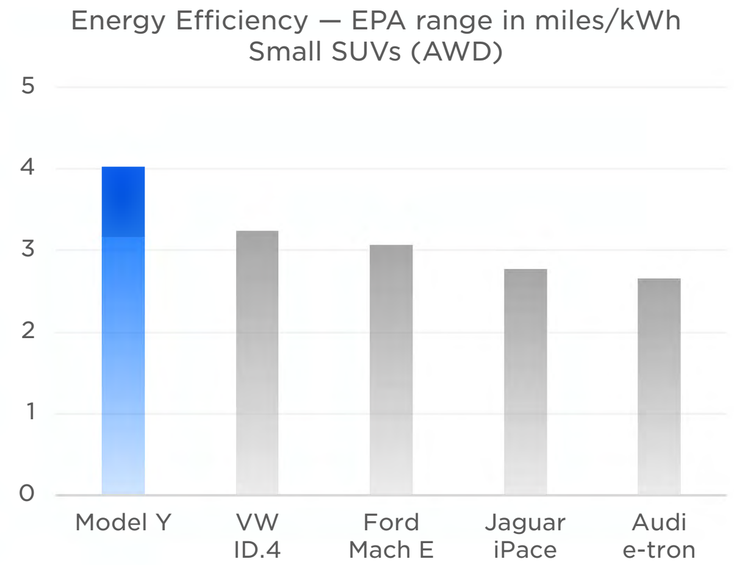
Reducing Carbon Footprint Even Further
Improving Powertrain Efficiency

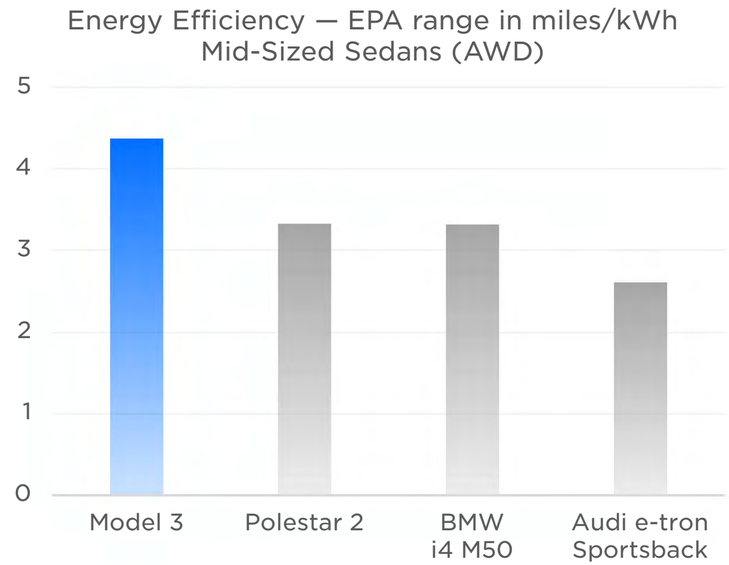
More efficiency than a Prius, performance of a Porsche

Tesla vehicles are among the most efficient EVs built to date. In the early days of Model S production, we were able to achieve energy efficiency of 3.1 EPA miles / kWh. Model Y All-Wheel Drive (AWD) achieves 4.1 EPA miles / kWh, which makes it the most efficient electric SUV produced to date. The gap between Tesla AWD vehicle efficiency continues to stand out compared to competitors in the same segment. While achieving the best-in-class energy efficiency, our AWD models can accelerate to 60 mph in just 4.2 seconds (4.8s for Model Y) and reach a top speed of 145 mph (135 mph for Model Y). In isolation, high energy efficiency is already difficult to achieve, but getting both performance and efficiency is the tricky part.

Tesla Robotaxis will be even more energy efficient

The energy efficiency of Tesla vehicles will continue to improve as we improve our technology and powertrain efficiency. It is also reasonable to assume that our high-mileage products, such as our future Tesla Robotaxis, will be designed for maximum energy efficiency as handling, acceleration and top speed become less relevant. This will minimize cost for our customers as well as reduce the carbon footprint per mile driven.





Source: OEM websites and other publicly available sources

Reducing Carbon Footprint Even Further

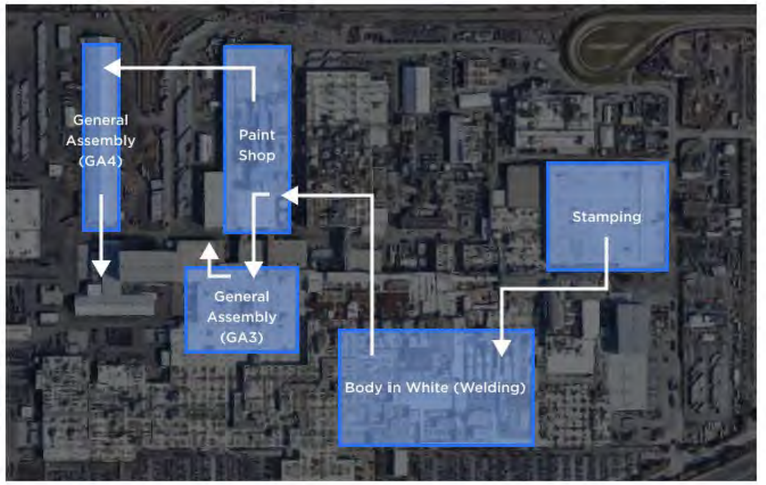
Tesla Manufacturing Footprint:
Current Actions

1. Building new, better designed and more efficient factories

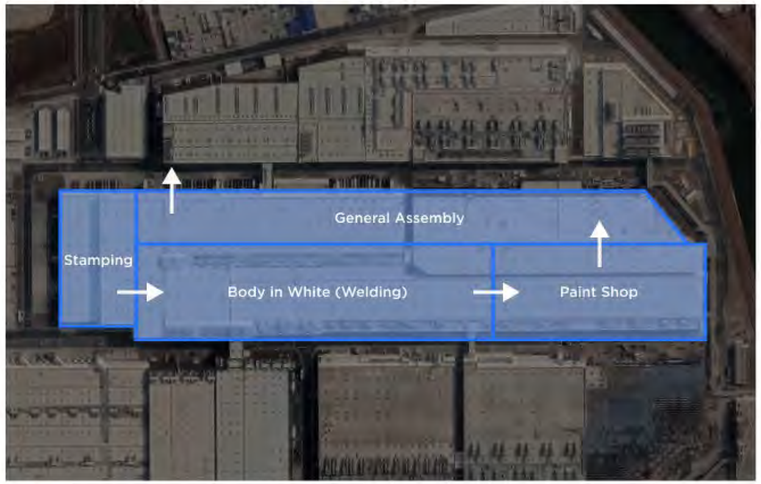
Building a factory from the ground up with sustainability in mind can have a material impact on reducing energy use. For each component that requires less movement around the factory, and as we use fewer robots in the vehicle production process, energy consumption declines.

In our quest for constant improvement, we build each new factory to be better and more sustainable than the previous one. For example, at Gigafactory Texas, we chose highly efficient, insulated, low emissivity windows to reduce building heating and cooling demand. In addition, waste heat recovery from our compressors alone will offset over 1 MW of natural gas consumption for process heating. While we have already completed substantial improvements at Gigafactory Shanghai, further improvements will continue at Gigafactory Berlin-Brandenburg and Gigafactory Texas.

Model 3 in Fremont, CA



Model 3 in Gigafactory Shanghai



kWh of Energy per Vehicle Produced

Reducing Carbon Footprint Even Further

Tesla Manufacturing Footprint:
Current Actions

2. Covering roof space with solar panels

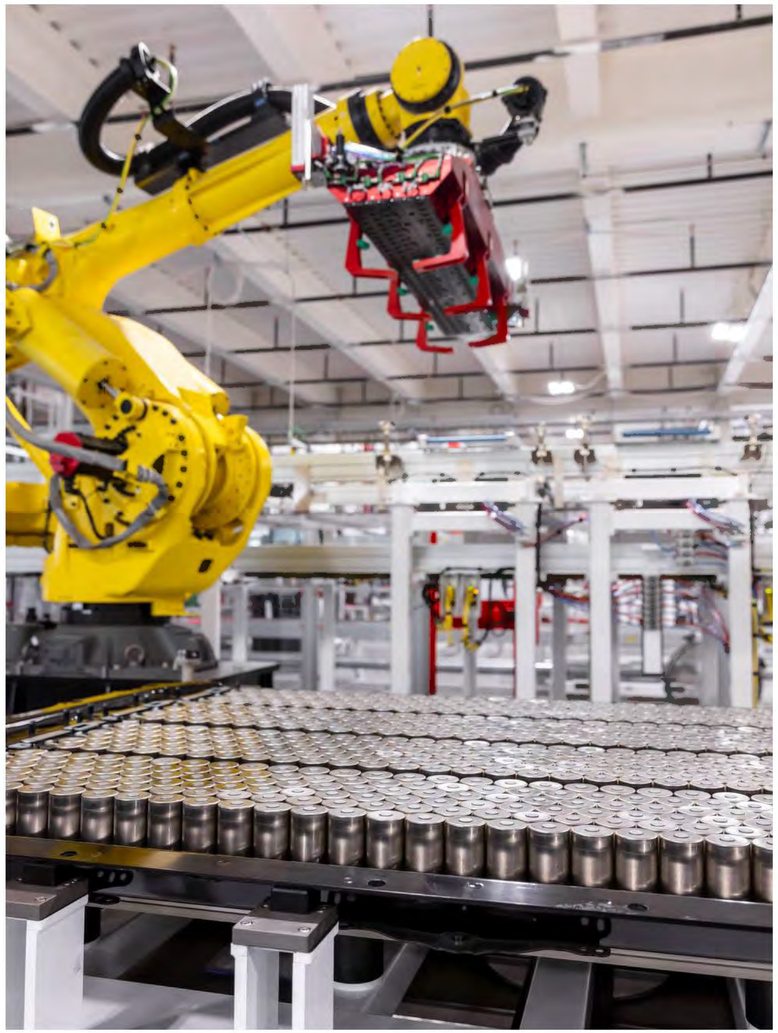
All our new factories are designed to be covered with solar panels. As of the end of 2021, we had installed solar panels with a capacity of 21,405 kW, with the vast majority installed on the roofs of Gigafactory Nevada, Gigafactory New York and our manufacturing facilities in California. We will continue to add more capacity to these and other facilities as space allows and as is economically feasible.

3. Leveraging AI to make our factories more efficient

We are leveraging six years of sensor data from Gigafactory Nevada to train an artificial intelligence (AI) program to safely control 195 interconnected HVAC units, accounting for 6MW of total electrical load. In its first full year of operation, we have measured significant load reduction compared to baseline usage. For such comparison, we look at actual energy usage for the HVAC system for the two modes under the same conditions (operations in the factory, time of year, external temperature, etc.). AI control is expected to achieve significant energy savings for Tesla as it is scaled up to control a majority share of HVAC equipment at Gigafactory Nevada as well as HVAC equipment at other Gigafactories.

Reducing Carbon Footprint Even Further

Tesla Manufacturing Footprint: Upcoming Plans



We will not be content until all our factories are carbon neutral, and there are other projects that we are working on to further reduce emissions. In order to reduce the cost of our vehicles and batteries, we also need to use less energy to produce them. Many of the projects created to achieve this goal were showcased at our Battery Day presentation in September 2020.

4. Transitioning to in-house manufactured 4680 Tesla cells, whose production process can reduce energy consumption by more than 70%

At Tesla's 2020 Battery Day, we presented a novel way that cells can be manufactured using a dry electrode process. Current electrode production processes involve mixing liquids with cathode or anode powders and using massive machinery to coat and dry the electrode. Since this process involves large ovens, today's cell production consumes a lot of energy. The new dry-electrode process allows for the direct transition from a cathode or anode powder to an electrode film, reducing energy consumption in the overall cell manufacturing phase by more than 70% based on our latest analysis.

5. Utilizing renewable energy as much as possible throughout all our operations

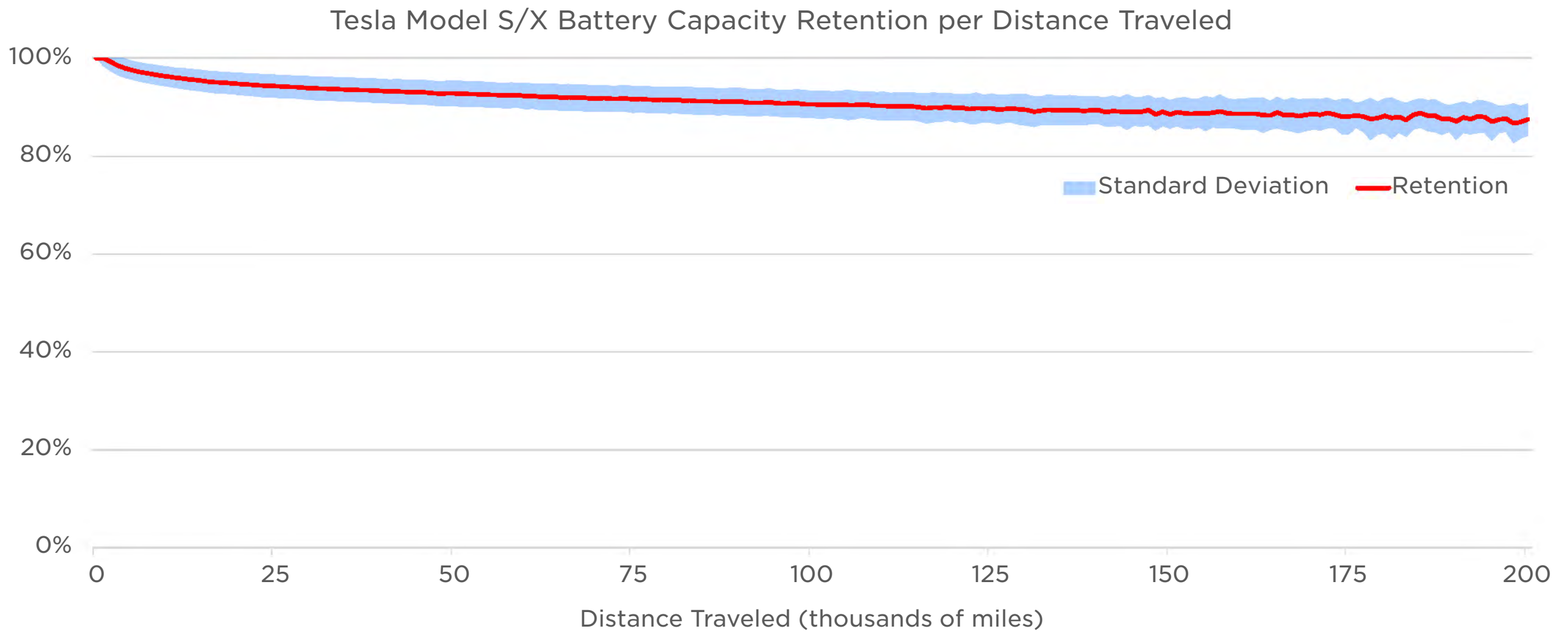
We plan to shift energy consumption toward renewables as quickly as possible throughout our operations, whether it is at our factories, sales, service or delivery locations or through our Supercharger network.

Reducing Carbon Footprint Even Further
Increasing Vehicle Utilization

Our batteries are designed to function for the entire life of the vehicle

Tesla's battery packs are designed to outlast the vehicle. We estimate that a vehicle gets scrapped after approximately 200,000 miles of usage in the U.S. and roughly 150,000 miles in Europe. Creating a battery that could last for 1,000,000 miles (4,000 charging cycles) would dramatically reduce the emissions per mile driven for high-mileage vehicles such as taxis, delivery vans or trucks.

Producing Robotaxis is a core part of our mission. All vehicles in the world combined travel trillions of miles every year. A relatively small number of vehicles, such as taxis, delivery vans, trucks and buses account for a disproportionate amount of vehicle miles and, as a result, a disproportionate amount of emissions. A single future Tesla vehicle with a million-mile battery could be utilized over five-times more than an average vehicle in the U.S. After being fully optimized, and even once it is scrapped, a battery can still be recycled and its materials used in a brand-new battery.



Note: Mileage is only one factor in battery capacity retention; battery age is also a major factor. Retention figures at lower mileages above likely reflect the impact of age while higher mileage values, which come from high-utilization vehicles, likely reflect less influence from battery age. Performance of newer chemistries (not yet shown here) can vary and we plan to expand disclosure once we have sufficient data.

GHG Emissions
Scope 1, 2 and 3

We can make the biggest impact on GHG emissions by selling as many of our products as possible. Undoubtedly, the use-phase of our products avoids more lifetime emissions than either our operations or our supply chain could. However, in support of our mission, we track and try to minimize emissions that result from our full value chain, including our supply chain, manufacturing processes as well as our sales, service and delivery activities.

In 2021, we began measuring our Scope 1 and Scope 2 GHG emissions considering the principles and guidance of the GHG Protocol. We used the operational control approach methodology – accounting for GHG emissions from operations under our control. For detailed information on the scope of our calculations, please see page 139-142 of this report.

While our total Scope 1 and Scope 2 emissions may increase on an absolute basis in the near term as we continue to open new factories, our goal is to reduce the emissions intensity from production as we push the boundaries of sustainable manufacturing and improve the efficiency of our operations. As part of our commitment to reducing our overall emissions in the long term we signed up for the Science-Based Target Initiative (SBTi) in 2021.

Metric	Unit of Measure	Manufacturing	SSD[1]	Other[2]	TOTAL
Scope 1 GHG emissions	tCO_2e	124,000	31,000	30,000	185,000*
Scope 2 GHG emissions (location-based)	tCO_2e	342,000	35,000	26,000	403,000*
Scope 3 | Category 11: Use of Sold Products (EV charging)	tCO_2e				1,954,000

[1] SSD = Sales, Service & Delivery
[2] Other includes sites that conduct research & development, administration, energy product warehousing and deployment, and other mixed-used warehousing.
*PwC performed an attest review engagement on this metric. See their report on page 138.

Scope 3 GHG emissions calculations are highly academic, even those widely used and accepted like the GHG Protocol. Most companies lack primary data as it relates to their supply chain, product use and so on. Therefore, most Scope 3 GHG emissions reporting is done using lofty assumptions as well as estimates from databases – this can lead to figures that are magnitudes off from the actual impact. Tesla has begun to measure the two largest categories within our Scope 3 emissions: those from use of product and our supply chain.

Use of product emissions

Tesla has access to primary data from our over two million vehicles on the road and our fleet of solar and storage products — we can calculate our emissions at a much higher level of accuracy than most manufactures and can therefore develop emissions reduction solutions to match. This also means that we can calculate our use of product emissions year on year — we do not have to estimate emissions over the lifetime of the vehicle because we have primary data.

Supply chain emissions

Prioritizing our supply chain is crucial and we have a lot of work to do to incentivize suppliers to provide energy and emissions data for us to report on. We have already started to identify which materials and processes in our supply chain are key emitters so we can prioritize engagement and projects to address these emissions — see the Supply Chain section for more detail.

The good thing for us is that Tesla's high level of vertical integration and our direct sourcing relationships mean we are positioned to manage upstream emissions better than most.

100% Renewable Supercharger network

Efficiency of an ICE vehicle does not improve throughout its lifetime. EVs will get cleaner over their lifetime as the grid becomes greener. We will continue to look for ways to enable our customers to further reduce their emissions beyond our vehicles — through solar and storage products and software to help differentiate when the grid is greener and pulling more renewable energy like solar or wind.

The global Supercharger network was 100% renewable in 2021, achieved through a combination of onsite resources and annual renewable matching. Additionally, all home charging in California was 100% renewable through annual renewable matching. Therefore, the only emissions from the use of Tesla vehicles were a result of home charging outside of California and use of third-party charging networks.

NO_x, Particulates and Other Pollutants

Pollution from burning fossil fuels leads to eight million premature deaths globally each year

According to recently published research in *Environmental Research* by Harvard University, in collaboration with the University of Birmingham, the University of Leicester and University College London, air pollution causes over eight million premature deaths annually. That is double the previous estimate of deaths from the negative effects of fine-particle pollution and would account for one-in-five premature deaths worldwide. This is a major advantage of EVs that is often forgotten about as the overall EV debate tends to focus on greenhouse gases. EVs are not just about the future of our planet, but very much about addressing preventable deaths today.

While air-quality is often categorized as a problem in developing countries, Nitrogen oxide (NO_x) and other PM2.5 particulates* cause significant issues in developed countries as well. In Europe alone, almost 800,000 people die prematurely every year due to pollution-related illnesses. EVs not only reduce the world's total carbon footprint, but also help to reduce city pollution.

Fine Particulate Air Pollution in Europe (2022)

Tesla Semi
Reducing Fleetwide Emissions

Tesla Semi is critical to our mission to accelerate the world's transition to sustainable energy. Right now, cell availability is the limiting factor for production – a Tesla Semi requires multiple times more cells than a passenger vehicle.

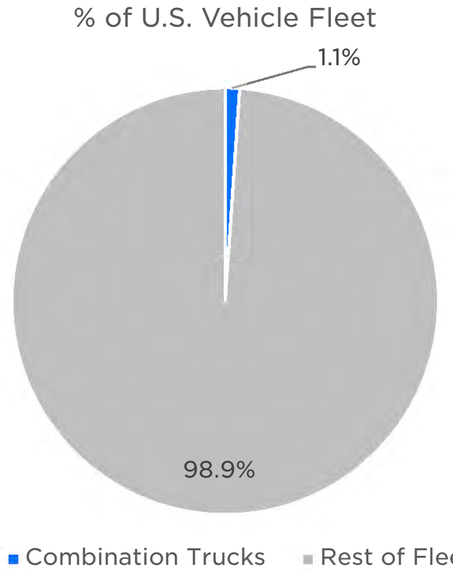
Semi offers an opportunity to have an outsized impact on GHG emissions from transport

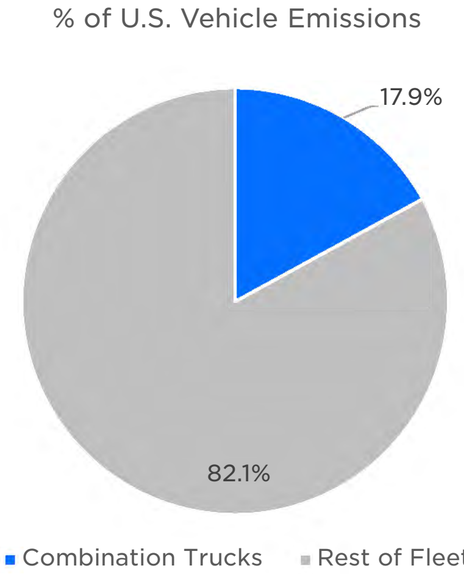
Combination trucks – of which the vast majority are semi trucks – in the U.S. account for just 1.1% of the total fleet of vehicles on the road. That said, because combination trucks have high fuel consumption due to their weight and heavy utilization, they account for approximately 18% of all U.S. vehicle emissions. Electrifying the heavy-duty truck segment is an essential part of transitioning the world to sustainable energy.

Payload equal to a diesel truck

With both the U.S. and E.U. having approved higher weight allowances for electric heavy-duty trucks, we expect the payload to be at least as high as it would be for a diesel truck. In the E.U., electric semi trucks are allowed to be 2 tons (~4,400 pounds) heavier than diesel equivalents, and in the U.S. the allowance is 0.9 tons (2,000 pounds). When fully loaded, the Tesla Semi should be able to achieve over 500 miles of range, achieved through aerodynamics and highly efficient motors. This truck will be able to reach an efficiency of over 0.5 miles per kWh.

While most heavy trucking journeys are shorter than 500 miles, we want long-distance hauling to also be sustainable. We are in the process of developing a Semi charger network at trucking rest stops across the U.S. and Europe, where each Tesla Semi could top up their range.





Waste Generated Per Vehicle Manufactured

As we build more efficient factories, our waste per vehicle decreases

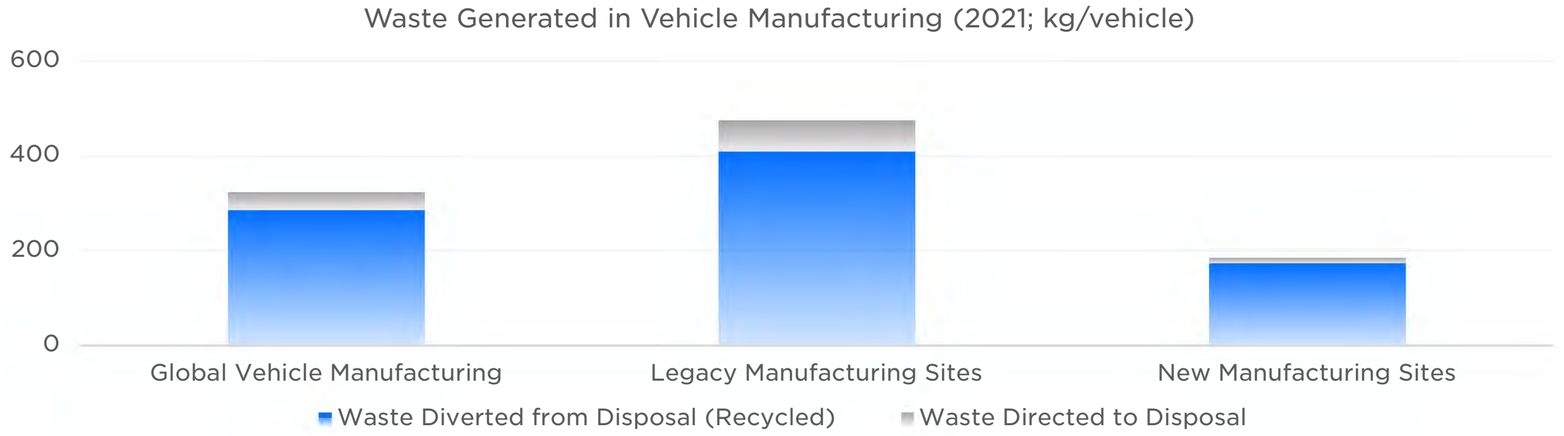
Building localized factories both makes sense economically and reduces waste. First, because the automotive supply chain doesn't have a strong presence on the West Coast of the U.S., many components need to be shipped from long distances, requiring excessive packaging and creating more waste than necessary.

Second, modern factories are better designed for material flow. Trailer entry points surround the whole factory, which means that components can be offloaded precisely at the part of the factory where they are needed. Less material flow results in less waste, because a shorter journey requires less protective packaging. The chart below shows that waste generation per vehicle at Gigafactory Shanghai is less than half of what it is in the U.S. We are expecting our upcoming factories such as Gigafactory Berlin-Brandenburg and Gigafactory Texas to continue the same trend.

Any materials that are possible to recycle, we recycle

The vast majority of generated waste, such as paper, plastics and metals, is recyclable. At Gigafactory Shanghai, for example, just 7% of total waste generated in 2021 was not recyclable.

We push for innovative approaches to reducing waste, which includes reduction of non-recyclable materials in the first place, learning from local factories and deploying improvements globally or working with our logistics team to minimize shipments and packaging per vehicle.



- Global Vehicle Manufacturing = all major factories dedicated to vehicle manufacturing, including the Fremont Factory and supporting facilities, Gigafactory Nevada and Gigafactory Shanghai.
- Legacy Manufacturing Sites = Gigafactory Nevada, Fremont Factory and supporting facilities.
- New Manufacturing Sites = Gigafactory Shanghai.

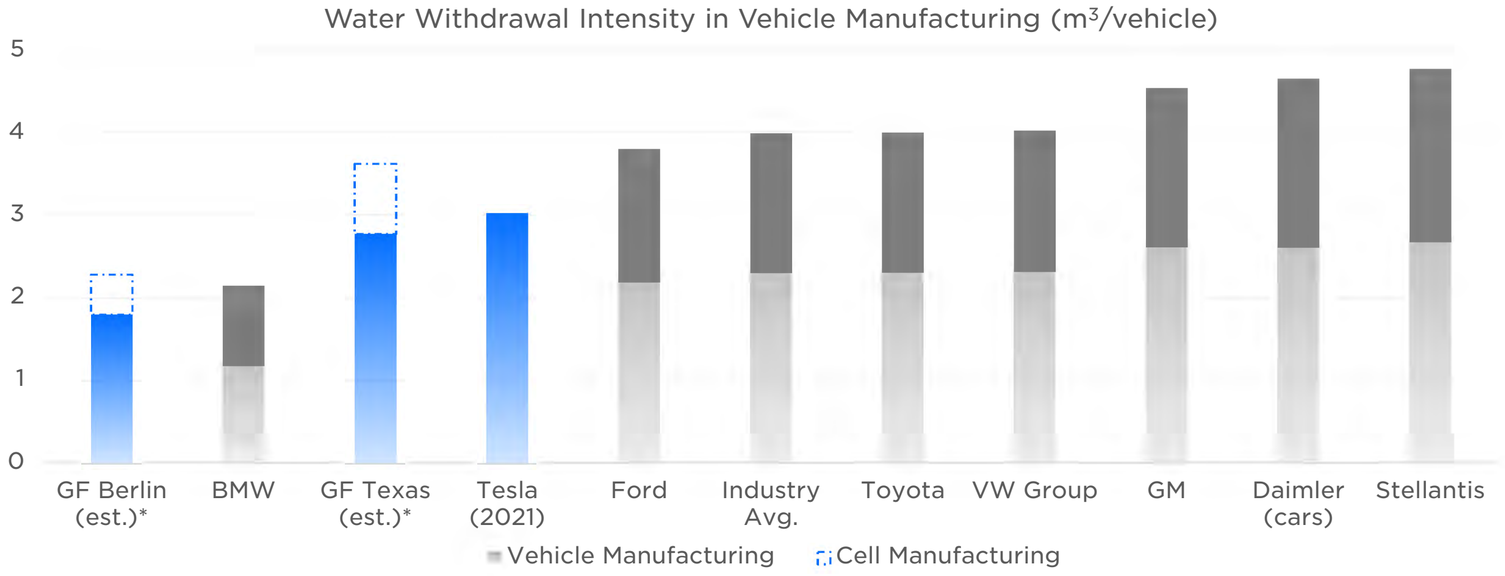
Water Used Per Vehicle Manufactured
Current State

We currently use less water per vehicle than almost any ICE carmaker

There is a misconception that producing an EV requires more water than producing an ICE vehicle. Our data shows this is not the case. While each automaker may draw their boundaries slightly differently (depending on how vertically integrated they are), according to the latest publicly available figures, Tesla withdrew less water at facilities dedicated to vehicle manufacturing per vehicle produced than the majority of established carmakers. Furthermore, the efficient manufacturing design we are implementing at our new factories in Texas and Berlin-Brandenburg will result in further reductions in our water usage per vehicle. Our goal is to have industry-leading low water usage per vehicle, even when accounting for cell manufacturing. The below chart includes our latest estimates for water usage per vehicle at those facilities.

Water usage and power generation

While many recognize the impact that power generation has on GHG emissions, its impact on water consumption is less appreciated. Power generation is one of the leading causes of water withdrawal in the U.S., as water for thermoelectric power is used to generate electricity with steam-driven turbine generators and to cool power-producing equipment. This means that every kilowatt-hour (kWh) of clean solar energy produced not only lowers GHG emissions, but also lowers water consumption.



*Latest estimate for water consumption based on factory design. Actual production figures will not be known until factories are ramped to full production speed.

Water Used Per Vehicle Manufactured
Initiatives at Our Factories

Tesla factories are setting a new standard of water use per vehicle

Water is becoming increasingly scarce as the climate changes. That is why we are reducing our water usage throughout our operations as much as possible. We have prioritized direct use in manufacturing and will continue to explore the rest of our impact throughout the supply chain and in sales, service and delivery.

The “cooling tower makeup” is the single biggest contributor to water usage in any car factory after paint operations. As water that cools machinery evaporates, it needs to be topped up regularly. The total cooling tower makeup could be offset entirely by non-potable sources such as rainwater or wastewater. These are some of the initiatives we are taking at Gigafactory Berlin-Brandenburg and/or Gigafactory Texas in order to reduce water consumption per complete vehicle (including cells).

1. Water intensive process optimization: We are constantly looking into reducing water consumption by optimizing or eliminating water intensive production processes across our operations. At Gigafactory Berlin-Brandenburg, we use hybrid cooling towers, have eliminated quench tanks in casting and introduced cascade rinsing systems in the paint shop and battery can wash process for cell manufacturing.

2. Rainwater and condensate harvesting and reuse: We are planning to capture at least 25% of roof runoff (1 million square feet) to a central underground storage system within Gigafactory Texas. Rainwater will be recycled for use in the cooling of manufacturing equipment. In an average year, such systems should save an estimated 7.5 million gallons of potable city water. Additionally, as hot, humid outdoor air is conditioned, water condenses out of the air. Typically, this condensate is discarded as wastewater. At Gigafactory Texas, we reuse this condensate in our cooling towers and process water systems to offset incoming site water.

3. Reclaimed and recycled water (wastewater reuse): Using local treated wastewater could result in offsetting the entire annual cooling tower makeup water demand with non-drinkable uses. At Gigafactory Texas, this could result in an estimated 40 million gallons of potable city water conserved annually. Reclaimed water is available and under investigation for use at both Gigafactory Texas and Gigafactory Berlin-Brandenburg.

Emissions Credits

Accelerating Deployment of New Factories

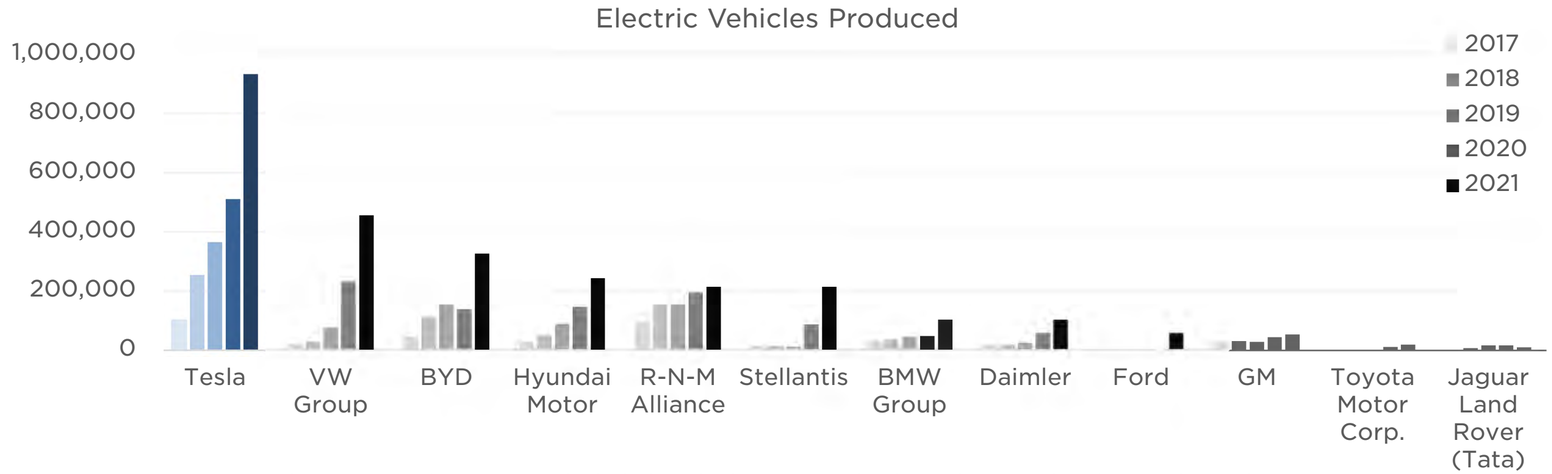
Emissions credit systems around the world are designed to economically benefit companies with non-polluting products by allowing them to sell their credits to polluting companies. In order to meet various countries' emission targets and avoid government fines, polluting companies pay non-polluting companies through credit purchases. The goal of this system is for every OEM to be incentivized to reduce emissions and themselves become non-polluting by selling more of their own manufactured EVs instead of paying another company for their non-polluting credits.

Emissions credit revenue is used for EV capacity expansion, which in turn displaces ICEs

In 2021, we generated almost $1.5 billion in revenue selling zero-emission regulatory credits to other OEMs. Proceeds from such sales will go towards building new factories to produce EVs that will continue to displace ICE vehicles. While it is common practice today for ICE vehicle OEMs to purchase regulatory credits from other companies (such as Tesla) to offset their total GHG emissions, it is not a sustainable strategy. In order to meet increasingly strict regulatory requirements across the world, OEMs will be forced to develop truly competitive EVs.

EV sales by all carmakers need to accelerate, taking market share from ICEs

In 2021, Tesla delivered almost 1 million EVs globally. We hope that every car manufacturer will strive to produce hundreds of thousands of EVs per year, as significant reduction of emissions will only be achieved if all carmakers push for an industry-wide shift to EVs.



Source: EV-volumes.com; Micro-cars not included. Tesla data are production volumes; other OEMs sales and delivery volumes are assumed to approximate their production for the year.

Product Impact

Vehicle Affordability
Price Equivalency Between EVs and ICE Vehicles

What Do We See As Impact?

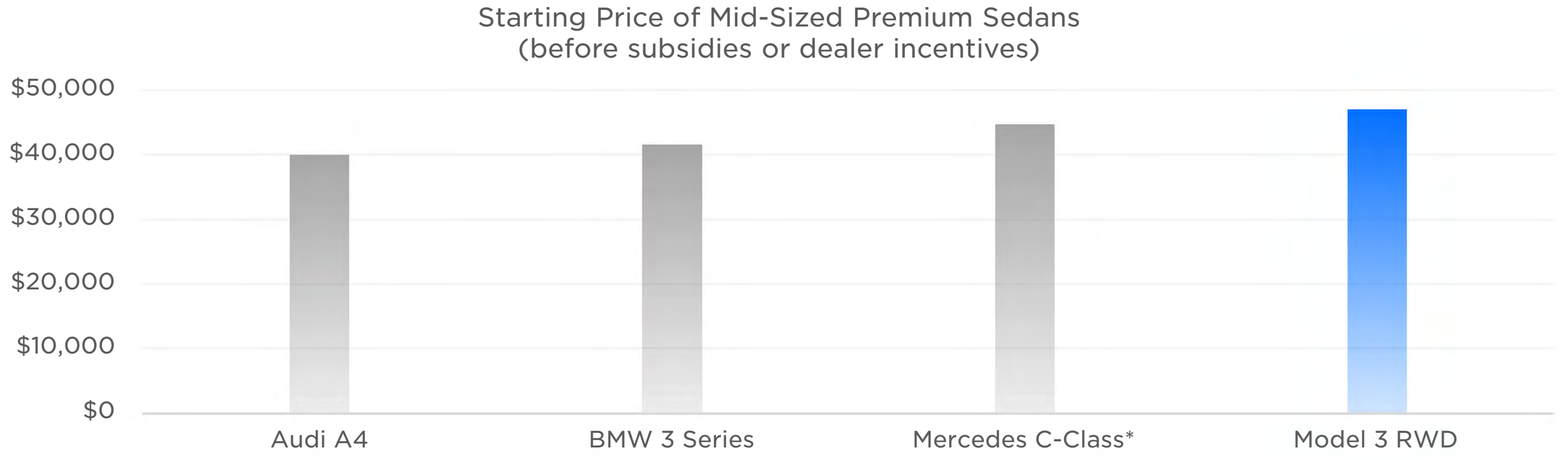
Consumers are unlikely to buy products only because they have a low lifetime carbon footprint. In order to convince consumers to buy our products, they need to be better in every way – performance, cost of ownership, safety, fun and more. We want to make products that people love.

Model 3 is the first EV to be priced on-par with ICE vehicle equivalents

Model 3 is the first EV in history priced competitively with its gas-powered equivalents, even before taking into consideration any regional subsidies and lower running costs. Unfortunately, most other EVs on the market today are often priced at over a $10,000 premium compared to their direct ICE vehicle equivalents.

There doesn't need to be a tradeoff between sustainability, performance and affordability

Tesla's ability to achieve our mission rests first and foremost on our products. We are not just trying to build the best electric cars, we are striving to build the best cars, period. Our focus from the beginning has been to develop products that are not only sustainable, but also superior to fossil-fuel alternatives in every way. Many incorrectly believe that choosing sustainable products requires consumers to compromise on price or performance, but Tesla vehicles combine performance, safety, efficiency and competitive prices. Similarly, Tesla's energy generation and storage products power both urban and remote communities with reliable, affordable energy.



Source: OEM websites; pricing as of March 2022.
*As reported by CarandDriver.com; Daimler has not yet disclosed pricing for 2022 C-Class.

Vehicle Affordability
Total Cost of Ownership

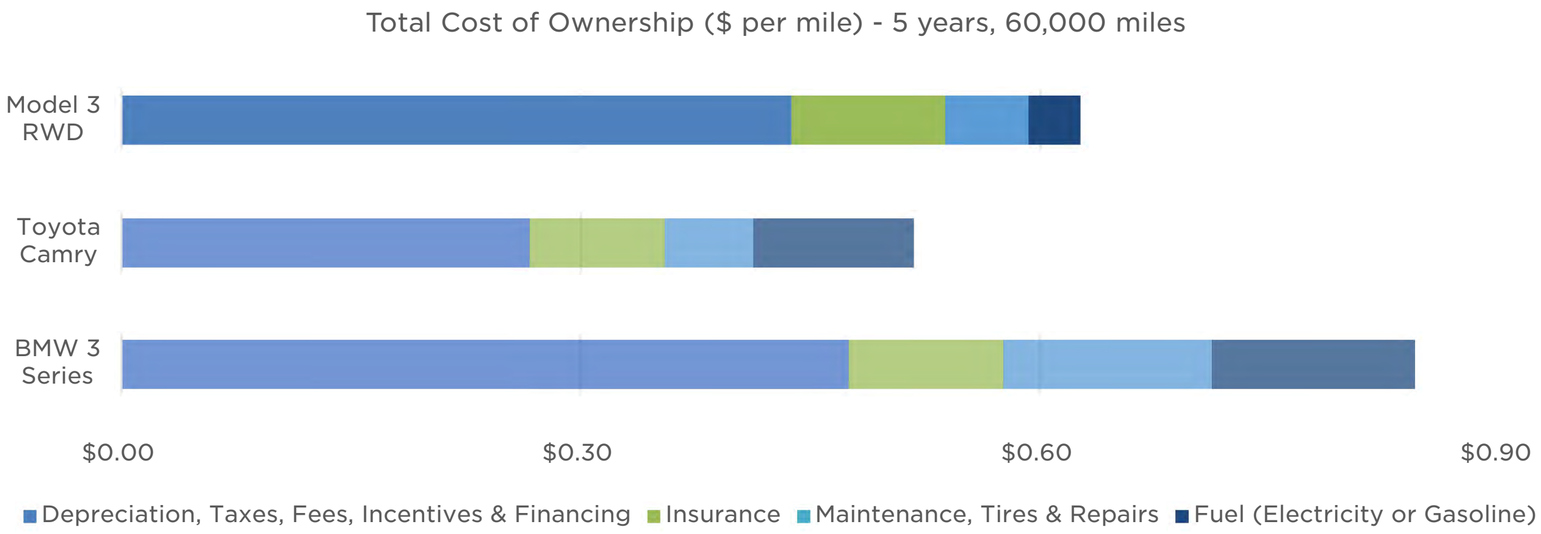
Over 5 years of average driving, the ownership costs of a Tesla Model 3 are closer to a Camry than a 3 Series

The accessibility of our products is fundamental to our mission. While the “sticker price” of Model 3 is similar to an equivalent BMW or Audi, the sticker price of a vehicle itself is only one of many cost items that need to be considered. The lifetime running costs of EVs are lower than those of ICE vehicles due to lower maintenance costs, cheap electricity and high residual value of used Tesla vehicles, the latter of which has remained exceptionally strong since our initial launch. As a result, Tesla Model 3 has a base price similar to BMW 3 Series, but the total cost of ownership per mile is closer to America’s best-selling sedan, the Toyota Camry*.

Cost data is based on data collected from our fleet

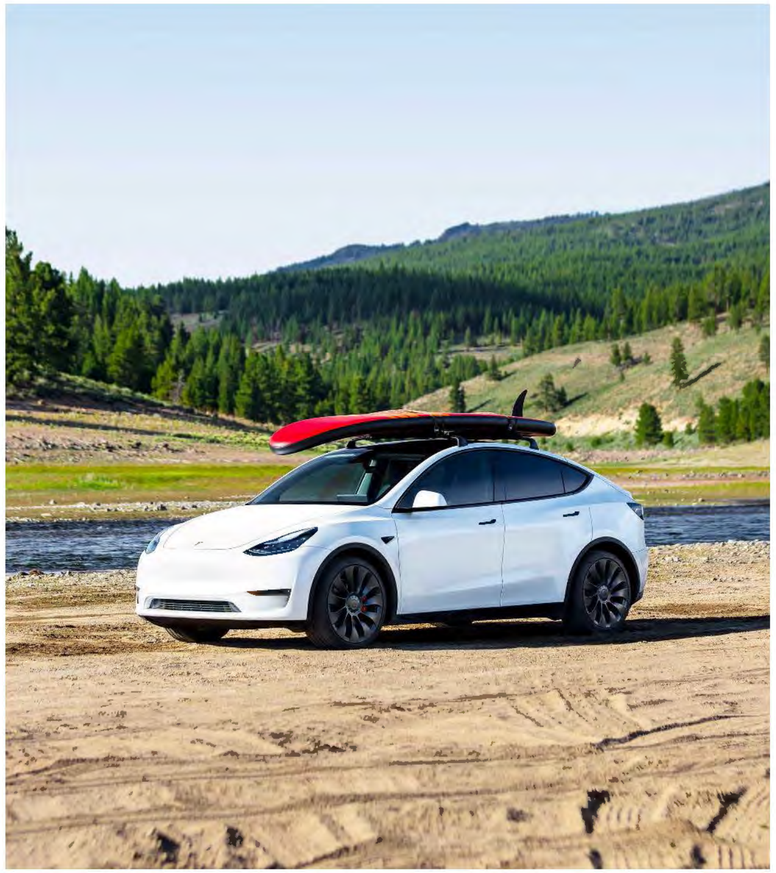
The advantage of having a fleet of vehicles that is constantly online is the ability to analyze real-world data rather than only being able to use estimates. We have an extensive database of Model 3 residual values and cost of repairs, maintenance, energy use, etc. Additionally, the insurance cost for the Model 3 RWD below is based on the projected median insurance rate in the U.S. for Tesla Model 3 drivers. Our analysis shows that over five years and 60,000 miles, running a Model 3 RWD costs 63 cents per mile.

Notably, running costs such as fuel (electricity or gasoline), maintenance, tires and repairs for Model 3 should cost just over half of a mass-market ICE vehicle such as a Toyota Camry.



*Based on model year 2021 vehicles. Please see page 137 for sources.

Vehicle Usage
EVs as the Primary Vehicle

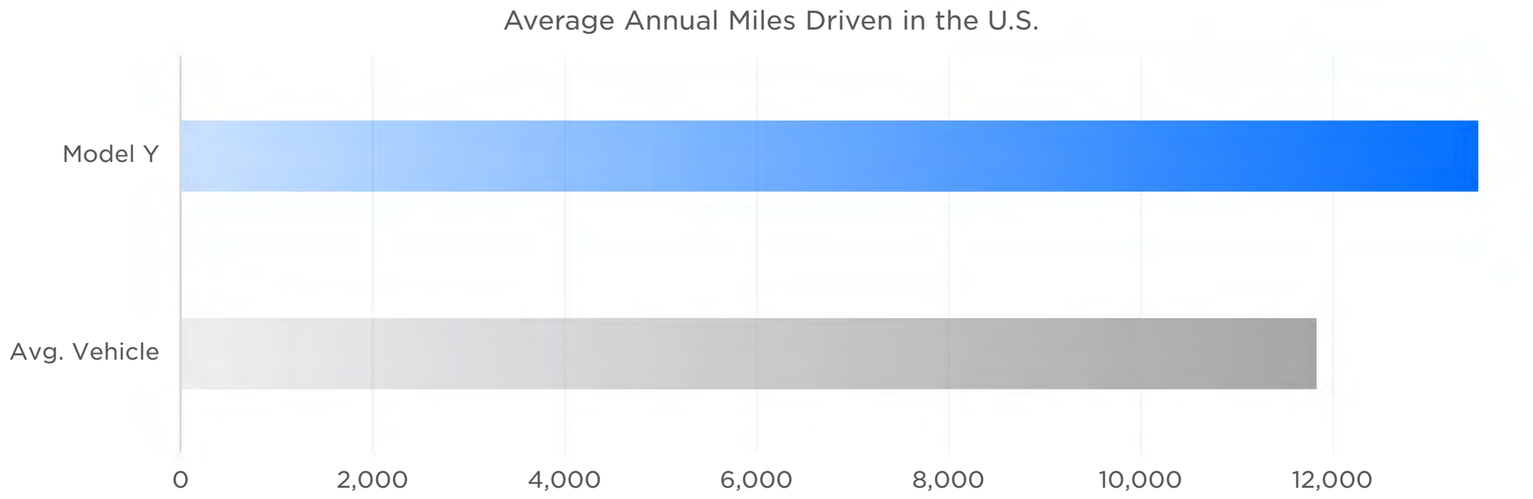


Customers are using their Tesla as their main car

For an EV to have an impact on the environment, it must be genuinely displacing internal combustion engine miles, rather than sitting in the driveway as a secondary car used for errands or short trips only. Our data shows that Tesla vehicles are being driven more than average vehicles in the U.S., suggesting that they are generally being used as a customer's primary vehicle. We fundamentally believe that you shouldn't have to choose between price, quality, usability and sustainability. An EV should be the best vehicle in every way, so consumers don't ever need to use ICE vehicles.

The longer the range, the higher the usage

There is a clear relationship between range, how often an EV is utilized and whether it is a primary-use vehicle. The more confident owners are that their EV can be used for commuting, errands and long road trips, the less they will feel they need to supplement their EV with an ICE vehicle. Surveys consistently indicate that the real or perceived lack of EV range is the key reason why many people do not consider replacing their ICE vehicle with an EV.



Freedom of travel is the reason people buy vehicles in the first place. To ensure we replace as many ICE vehicles with EVs as possible, we have been focused on increasing the range of Tesla vehicles. While most personal vehicle journeys are relatively short, and thus drivable on a single charge, consumers do not buy cars that can meet *most* of their driving needs; they buy a car that meets *all* their driving needs.

The longer the range, the lower the Supercharger use

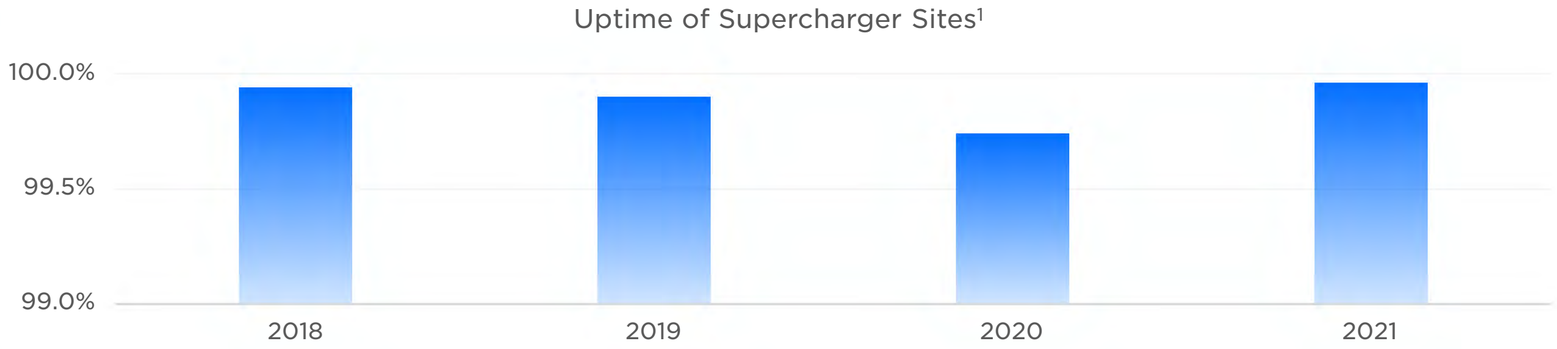
Since its introduction in 2012, we have increased the range of the Model S by over 50%: from 265 miles to 405 miles of range for the long-range version. Our focus on energy efficiency — achieving superior range from the same size battery — has allowed to us continue to increase range while keeping the battery size relatively stable. Our data shows that the longer the range of our vehicles, the less Supercharging Tesla customers do. After all, day trips of over 400 miles are quite rare.

Super-fast charging: V3 Superchargers can increase range by up to 200 miles in just 15 minutes

Around 300 miles of range at highway speeds is equal to roughly four hours of driving. At that stage, drivers are often likely to take a break. We want to make sure that such a break can be relatively short before continuing the journey. Our latest generation of Superchargers can recover up to 200 miles of range in just 15 minutes of charging, long enough for a quick break and snack.

Substantial coverage and 99.96% reliability

We're aware that the chart showing Supercharger uptime looks silly, but that's kind of the point. While coverage is important, uptime is essential. Few things are as frustrating as arriving to a charging station with a near-empty battery, realizing that none of the charging plugs are working. In 2021 alone, we opened 912 new Supercharger locations around the world for a total of nearly 3,500 charging locations with over 31,000 plugs.



[1]Uptime of Supercharger sites reflects the average percentage of sites globally that had at least 50% daily capacity functional for the year.

Safety Is Our Top Design Priority

At Tesla, safety features are not optional. Our full suite of safety features comes standard with every vehicle. When we design vehicles, first and foremost, we want them to be safe. This section of the Impact Report will detail our key efforts on the Vehicle Safety front.

IIHS Small Overlap Frontal Test – The Most Challenging Rating Test

Applies to both Model 3 and Model Y

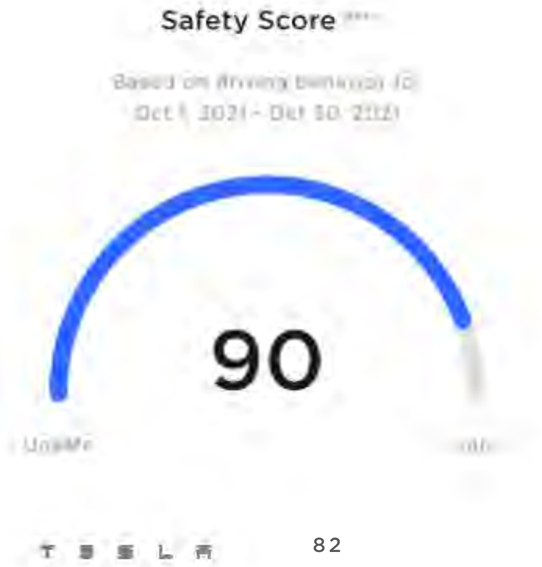
Safety Score^{Beta} – Incentivizing customers to drive safely

In addition to designing and building cars with the highest levels of real-world safety, we've also been working on ways to help our customers drive as safely as possible. Through our Tesla Insurance program, we do just this by providing real time feedback to customers and incentives for safe driving such as reductions in monthly insurance premiums.

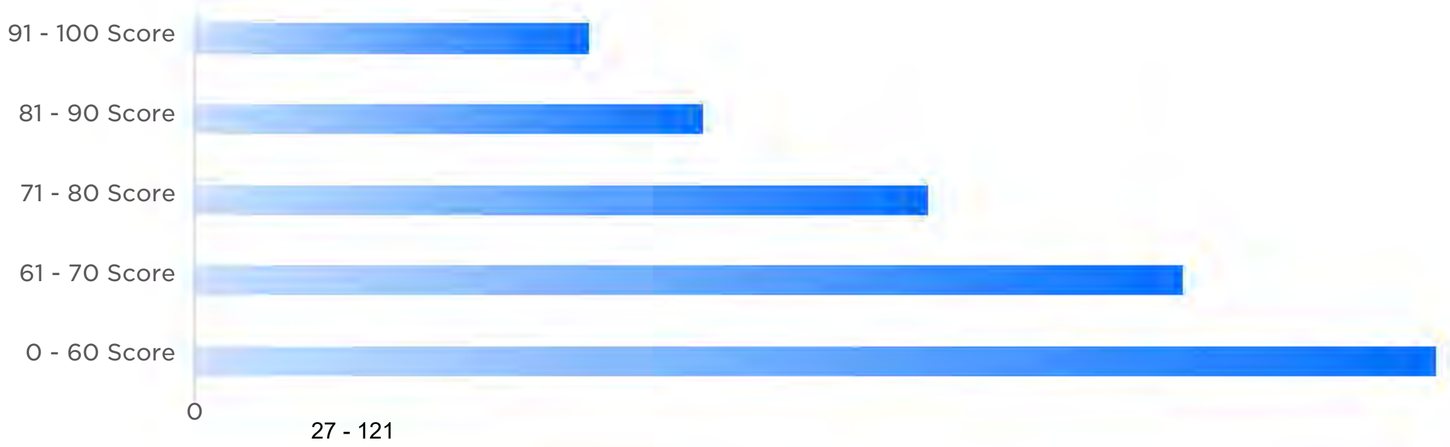
Customers who choose to be a part of this program receive a Safety Score^{Beta}. This score changes based on driving behavior and the insurance premium changes with it. Instead of determining a driver's insurance premiums from demographic information (gender, age, education, or marital status) and financial history (credit score), our algorithm calculates Safety Score^{Beta} based on actual driver behavior. The behaviors we monitor are:

- Forward Collision Warnings
- Hard Braking
- Aggressive Turning
- Unsafe Following (Tailgating)
- Forced Autopilot Disengagement

Our data show a lower rate of collision for the cohort of customers who have enabled Safety Score^{Beta}. As the vehicle's Safety Score^{Beta} increases, the number of collisions per mile decreases and insurance premiums reduce.



Collision rate per million miles ranked by Safety Score^{Beta}



Our commitment to safety is why all Tesla vehicles built since October 2016 come with a suite of external cameras, additional sensors and onboard computing that enable advanced safety features like Automatic Emergency Braking, Lane Departure Warning, Forward and Side Collision Warning, Obstacle-Aware Acceleration, blind spot warnings and more — all of which continue to improve over time through software updates. We recently introduced active safety features that go beyond the norm:

Traffic Light & Stop Sign Warning

When a driver doesn't notice a red light or a stop sign, our cars will notice that vehicle's speed is too high. Thanks to our eight-camera system, each vehicle can recognize a traffic light that is specific to vehicle's trajectory as well as a stop sign. A loud warning is triggered to alert the driver.

Pedal Misapplication Mitigation (accelerator pressed inadvertently)

Pressing the accelerator pedal when the circumstances indicate you should be pressing the brake instead, like when pulling into a parking space, is relatively common no matter what vehicle you're in. However, if you are in a Tesla, when our cameras recognize an object in front of the car, "Pedal Misapplication Mitigation" system cuts torque from the electric motor to prevent a collision if you happen to press hard on the accelerator. This technology has prevented or mitigated hundreds of collisions every month.

Active avoidance of lane departure or a blind-spot collision

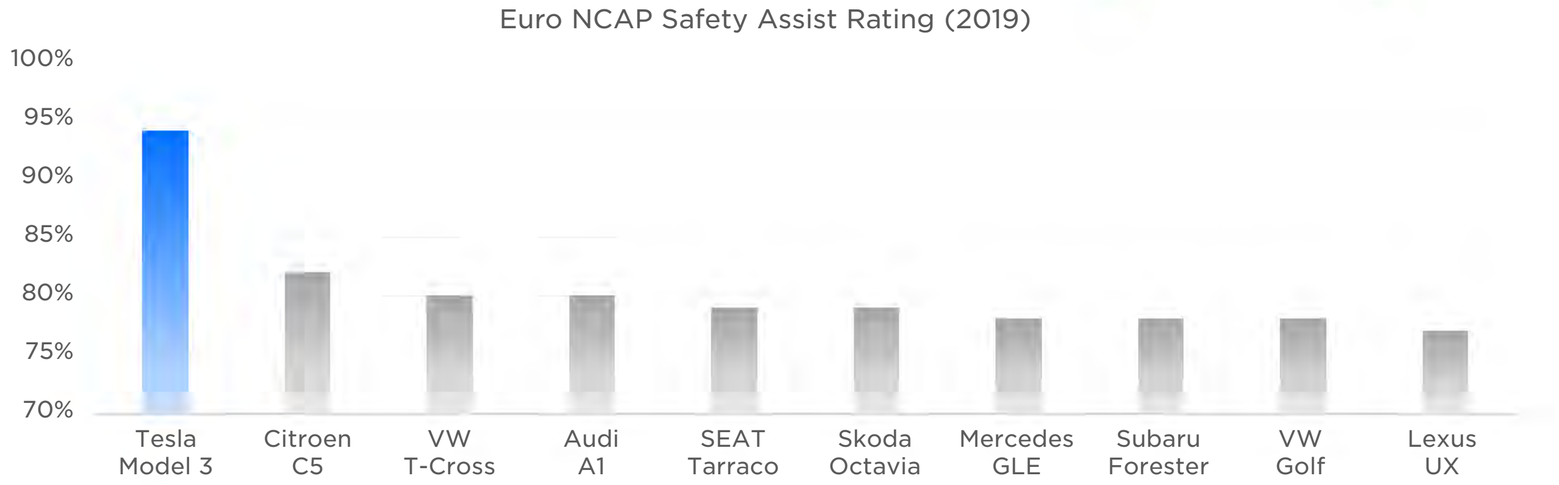
If a driver is changing into a lane while a vehicle in the blind spot is entering the same lane, or if our vehicle starts departing its lane without an indicator, our vehicles will sound a warning and assist the steering to avoid a collision.

Not all Active Safety systems are created equal

Many people assume that AEB (Automatic Emergency Breaking) – a system that most new vehicles are equipped with – works equally well with all vehicles. That's not the case. The range of sensors, compute power and quality of software in the system can vary dramatically. Our active safety features are powered by eight cameras, a neural-net computer and learnings from our fleet of over two million cars.

After the introduction of Tesla Vision (a vision-only system that excludes radar), our active safety ratings with IIHS improved. Pedestrian AEB performance of our Tesla Vision was over 45% better than performance of vision + radar. It is no surprise that the active safety score achieved by Tesla Model 3 Euro NCAP remains an outlier.

	Model X	Model 3	Model Y
Euro NCAP*	94%	94%	Scheduled for 2022
ANCAP* (Australasian New Car Assessment Program)	94%	94%	Scheduled for 2022
IIHS (Insurance Institute for Highway Safety)		Superior	Superior

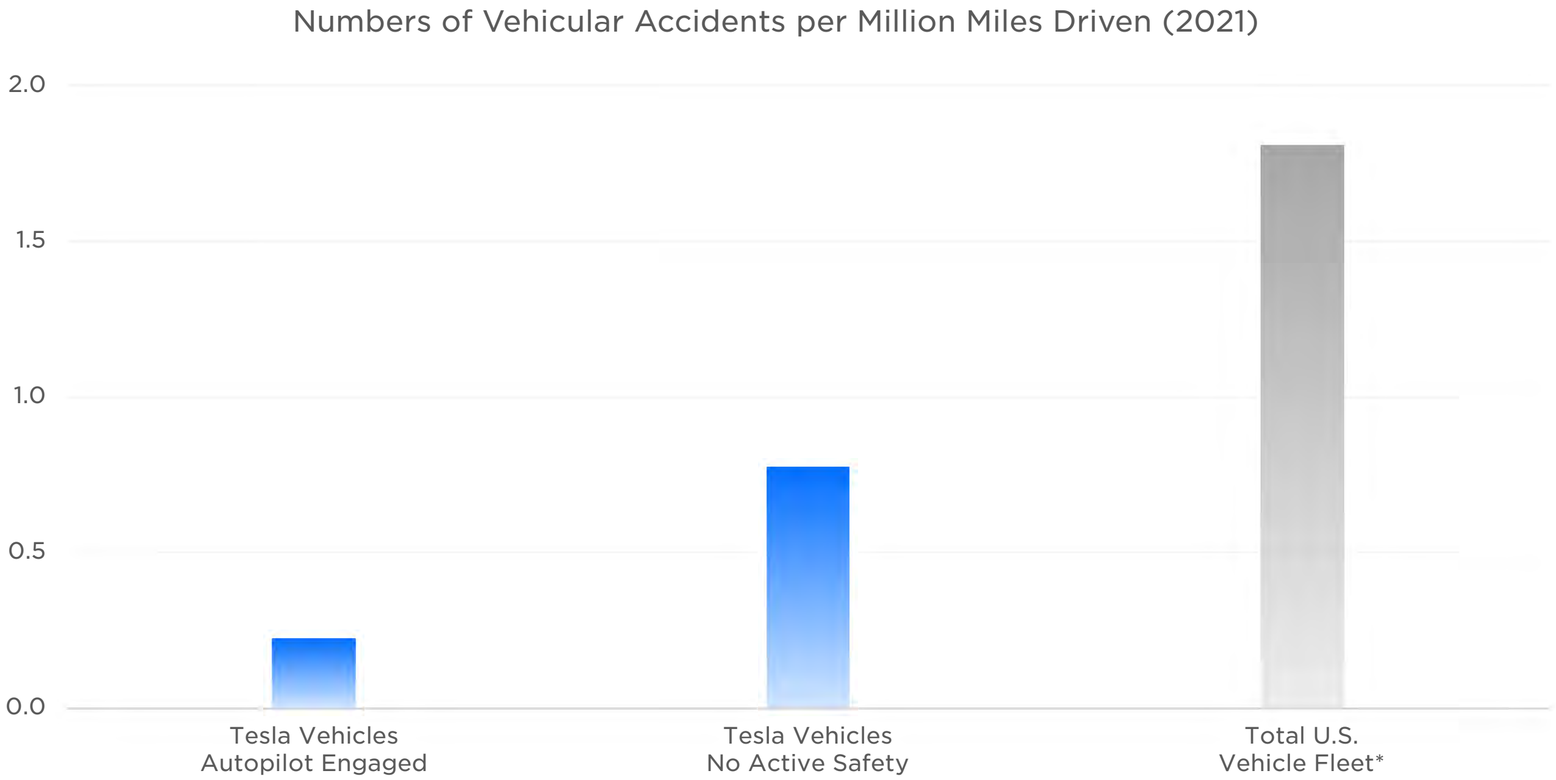


*2019 Safety Assist ratings

Vehicle Safety
Autopilot Safety

Tesla vehicles are engineered for safety and when Autopilot is engaged safety is enhanced

In 2021, we recorded 0.22 crashes for every million miles driven in which drivers were using Autopilot technology (Autosteer and active safety features). For drivers who were not using Autopilot technology (no Autosteer and active safety features), we recorded 0.77 crashes for every million miles driven. By comparison, NHTSA's most recent data shows that in the United States there are 1.81 automobile crashes for every million miles driven.



For the latest quarterly accident data related to our vehicles and a description of our methodology used to collect accident data, please view our Vehicle Safety Report.

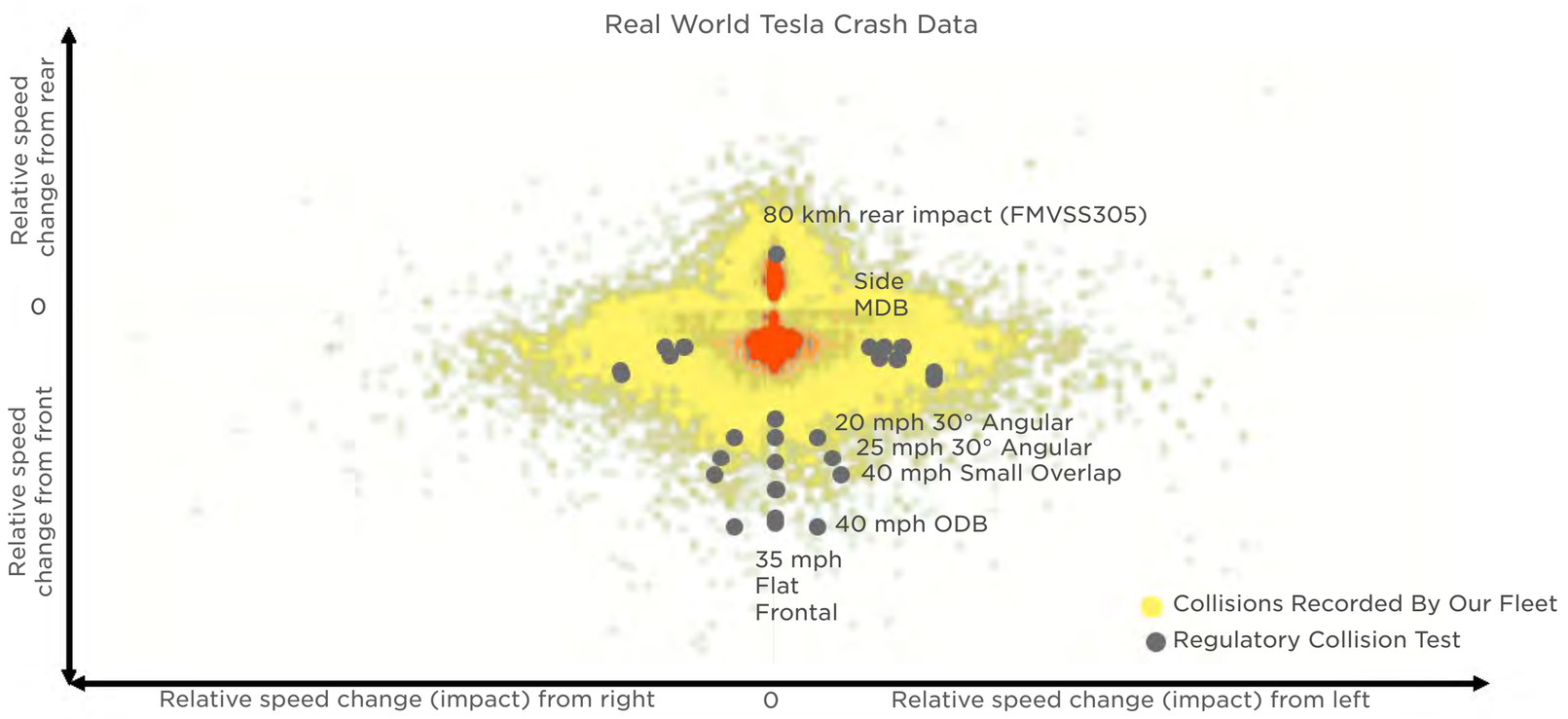
*Based on NHTSA's most recent crash data.

Vehicle Safety
Data-Driven Pre-Crash Safety

Tesla strives to go beyond industry standard testing by using real-world data from our fleet of over two millions cars on the road. Historically, the aim of manufacturers has been to design their vehicles to perform well for a suite of regulatory and consumer tests. There are too many common impact scenarios (visible in the heatmap below) that are simply not covered by regulatory crash tests. The richness of data we are collecting enables us to develop safety in all scenarios, not only the ones covered by regulation and ratings.

Algorithm, Trained By Fleet, Triggers Optimal Safety Responses

We analyze data from our fleet to find solutions, which we then update via over-the-air software updates. Our algorithm uses vehicle sensor data and, within tens of milli-seconds of impact, determines what type of impact has occurred and triggers the seatbelt pretensioners and airbags to respond in the most optimal way down to the millimeter and mile per hour. Tesla engineers are also in the final stages of evaluating a system which uses Autopilot to identify when a crash is imminent. This gives Tesla vehicles an uncanny ability to predict potential collisions and respond faster to an impact when it does occur.



Changing How Vehicles Are Designed For Safety

We use field data, data analytics and simulations to inform our design and safety engineers' work on future products and to send software improvements to our existing fleet via over-the-air updates. Tesla is also sharing data and statistics collected by our vehicles with select regulatory bodies and external research organizations — in an anonymized fashion or with consent and in accordance with local data privacy laws — giving them access to an unprecedented opportunity to understand crashes in the real world. This access to data will accelerate impact safety research, driving change across the safety industry and improved safety outcomes for all vehicles to protect lives.

Post-Crash Data Analysis

After we send new software to the fleet, we wait for new data to come through to understand the efficacy of the system once it is deployed in the real world. Since deployment of our 'offzone' side algorithm (data-driven safety), we learned that of the total vehicles that had their airbags deployed, 15% of those deployed due to our new algorithm in these new modes. This confirms our expectations and highlights how effective fleet-based learnings and rapid deployment of novel solutions can be.

Why Airbags Sometimes Don't Deploy

In a fairly common "small overlap" collision as the one shown below, front sensors are unlikely to pick up a side collision, as they are usually designed to detect a frontal collision. And side sensors are usually too close to a driver window to detect a collision far in the front. We designed our sensors and their positions in a way that they can pick up nearly every type of collision and deploy airbags if necessary.

Watch video on Data-Driven Safety

Restraints Deployments Since Introducing Data-Driven Algorithm

Vehicle Safety
Passive Safety/Collision

Safety starts with our clean sheet design

Improving occupant safety has always been key to our mission. All our vehicles are built off a safety-first architecture with a low center of gravity (thanks to the positioning of our battery) and enhanced frontal impact safety (thanks to the front trunk that is void of the engine found in forward engine ICE vehicles).

Added benefit of enhanced performance

Based on the advanced architecture of Model S and Model X, we engineered Model 3 and Model Y to be some of the safest cars built to date, anywhere. Even though Model 3 and Model Y have no engine, their performance is similar to a “mid-engine internal combustion car” due to a centered battery pack and the fact that the rear motor is placed slightly in front of the rear axle rather than behind it. Not only does this architecture add to the overall agility and handling of the car, but it also improves stability control effectiveness by minimizing rotational kinetic energy.

Model 3 and Model Y score 5-stars in all USNCAP categories

After putting Model 3 and Model Y through a series of crash tests used as part of the New Car Assessment Program to calculate the likelihood of serious bodily injury for front, side and rollover crashes, the National Highway Traffic Safety Administration (NHTSA) awarded each top safety ratings of 5-stars in every category and subcategory.

Over-the-Air Updates

Tesla has pioneered the state-of-the-art way of improving a vehicle’s safety over time

A hallmark of Tesla ownership is connectivity. We are an industry leader in deploying over-the-air (OTA) software updates to our vehicles. These updates are integral to – and continuously enhance – the customer experience, and they can include improvements to customer safety or a remedy to a recall. OTA updates can be installed at a customer’s convenience without a trip to a Tesla Service Center.

Vehicle Safety
Safety Awards

Since 2019, Tesla vehicles earned 5-star ratings from safety rating agencies across the U.S., Europe and Australia. Furthermore, all of Tesla's safety features come standard with every vehicle and our ratings are based on our standard safety equipment. At Tesla, we do not believe that safety should be optional.

	NHTSA 5-Star Safety Ratings More Stars. Safer Cars.	IIHS HLDI	EURO NCAP FOR SAFER CARS	ANCAP SAFETY	C-IASI 中国保险汽车安全指数 CHINA INSURANCE AUTOMOTIVE SAFETY INDEX
Model 3	★★★★★	2022 IIHS TOP SAFETY PICK+	★★★★★	★★★★★	Top rating for occupant safety and active safety
Model Y	★★★★★	2022 IIHS TOP SAFETY PICK+	Scheduled for 2022	Scheduled for 2022	Top rating for occupant safety, pedestrian safety and active safety

Fire incidents are ~11x lower for Tesla vehicles than the average vehicle in the U.S.

When the media reports a story about a vehicle fire, it is usually reporting on an EV fire. This is likely a result of chasing clicks, rather than the prevalence of EV-related fires compared to ICE vehicle-related fires. The reality is, when compared to Tesla vehicles, ICE vehicles catch fire at a vastly higher rate. According to the latest available data, in 2020, there were almost 173,000 vehicle fires in the U.S. alone.

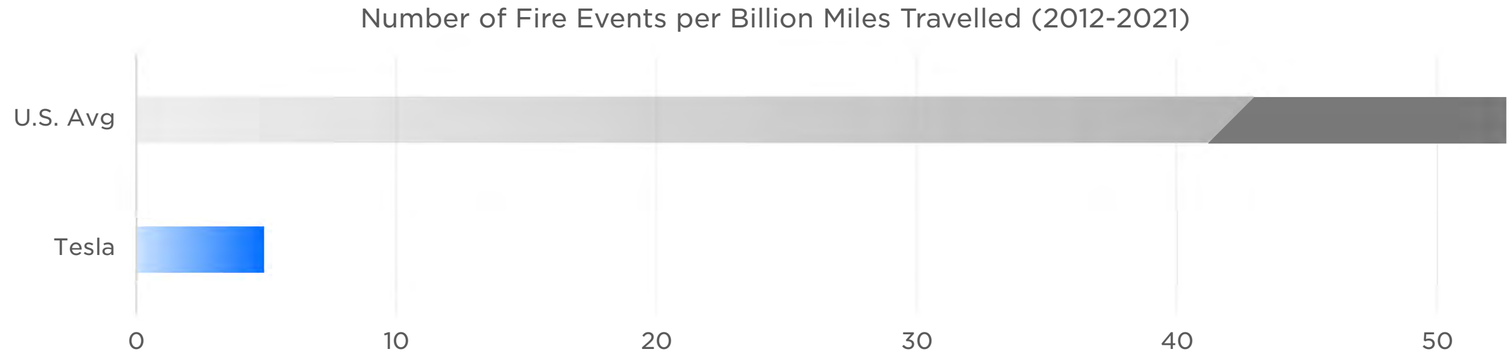
From 2012 to 2021, there has been approximately five Tesla vehicle fires for every billion miles traveled. By comparison, data from the National Fire Protection Association (NFPA) and U.S. Department of Transportation show that in the U.S. there are 53 vehicle fires for every billion miles travelled.

In order to provide an apt comparison to NFPA data, Tesla's data set includes instances of vehicle fires caused by structure fires, arson and other reasons unrelated to the vehicle, which account for some of the Tesla vehicle fires over this time period.

We continue to improve safety

We continue to improve our battery chemistry, cell structure, battery pack structure and vehicle passive safety in order to decrease fire risk to as close to zero as possible. As Tesla's vehicle technology continues to improve, fires will be even less likely for our EVs.

Tesla has partnered with European and Australasian NCAPs to provide free mobile app-based emergency response documentation for quick access to Tesla vehicle specific models. We make detailed information available to first responders so they can safely handle those emergency situations.

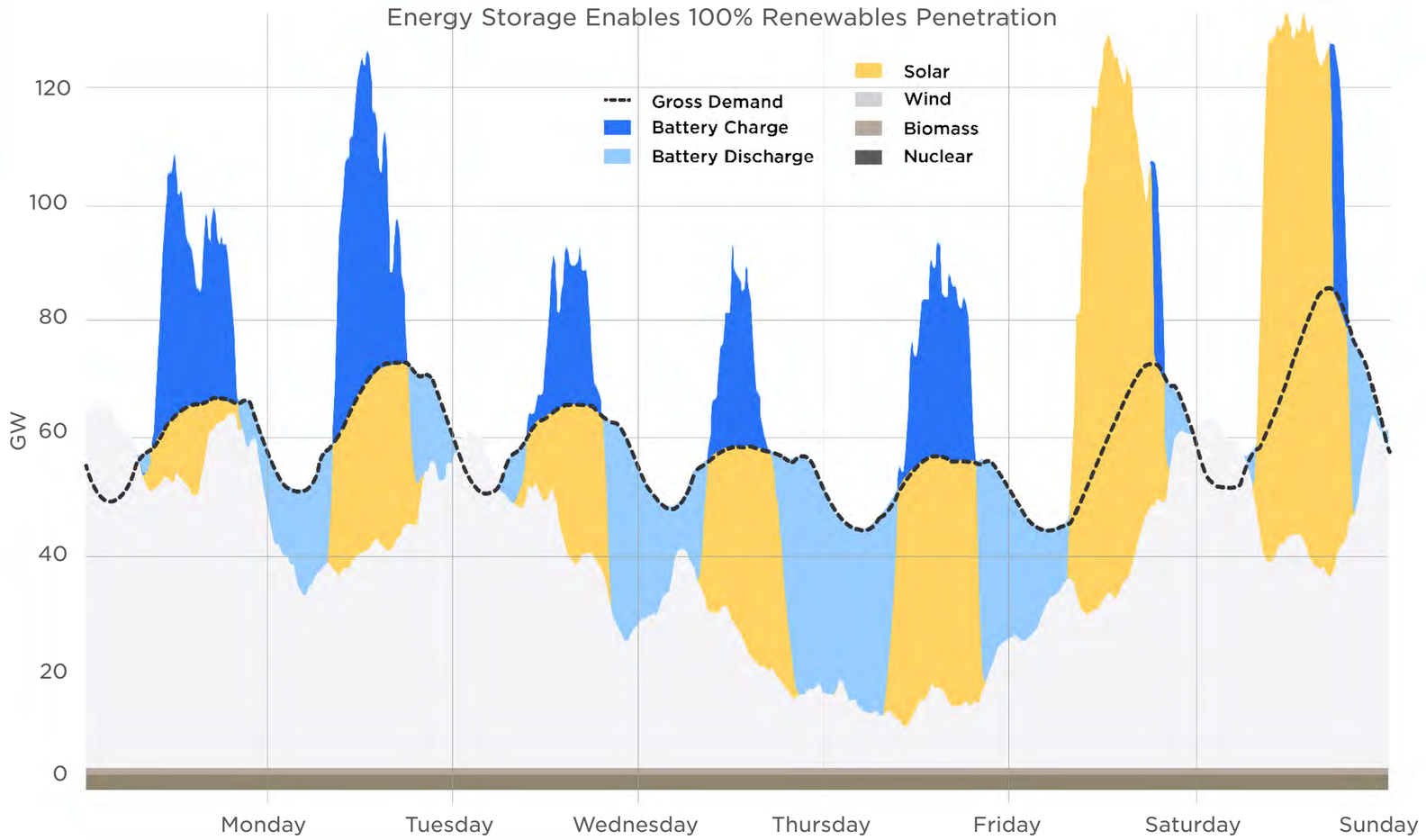


For the latest fire data related to our vehicles, please view our Vehicle Safety Report.

Solar + Storage Product
Matching Energy Demand & Supply

Commercial scale customers: Megapack and renewables

The beauty of selling commercial storage systems such as Megapack is that purchasing such a product is almost purely a mathematical decision for our commercial customers. If installing Megapack makes economic sense, there is no reason not to install one. A single Megapack has on average 3,000 kWh worth of battery storage capacity, and given its scalability, enables projects over 1,000,000 kWh. Tesla Energy continues to be dependent on the global supply chain, including cell supply. In 2021, in order to meet demand that is well in excess of supply for energy storage products, Tesla began building a new production facility capable of producing 40,000,000 kWh of energy storage per year.



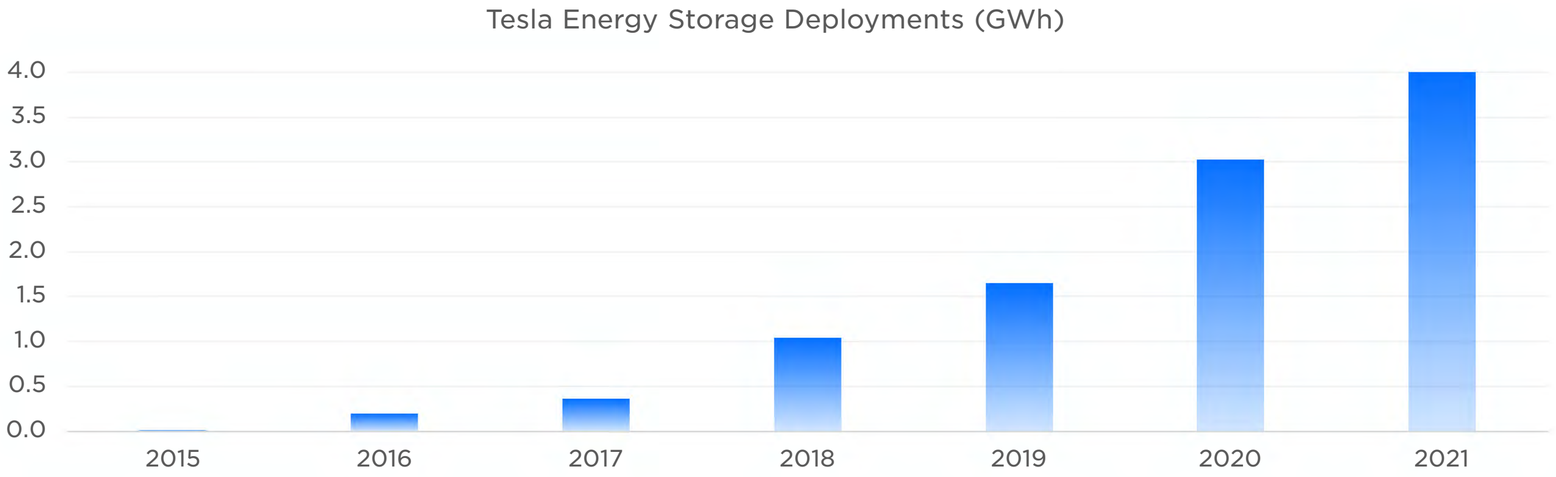
Solar + Storage Product
Potential For Growth

Pairing energy storage with renewables enables cost-effective decarbonization of the grid

The best way to avoid blackouts is to reduce your reliance on the grid. Tesla is a one-stop shop for taking our customers off-grid by covering a large variety of their needs. In 2021, Tesla sold 4 GWh worth of energy storage products, more than 15% of the 25 GWh global market*. Some of these projects were massive deployments, including a 371 MWh installation in California and a 497 MWh installation in Victoria, Australia. In order to switch global energy usage to renewable sources, we estimate that global annual battery storage production will need to increase to ~10,000 GWh.

Residential customers: Solar Roof, solar panels and Powerwall

Anyone can dramatically reduce their carbon footprint by installing Solar Roof or solar panels with Powerwall. In theory, all U.S. domestic electricity needs, as well as vehicle transportation needs, could be met by sunlight alone. Naturally, installation of such a system needs to make financial sense for the customer. In Massachusetts, for example, we estimate that an average solar and storage system pays for itself with energy cost savings within approximately 10 years. As the cost of these products continues to decline, more customers will be willing to switch to solar and storage purely due to lower overall cost.



*Source: S&P Global

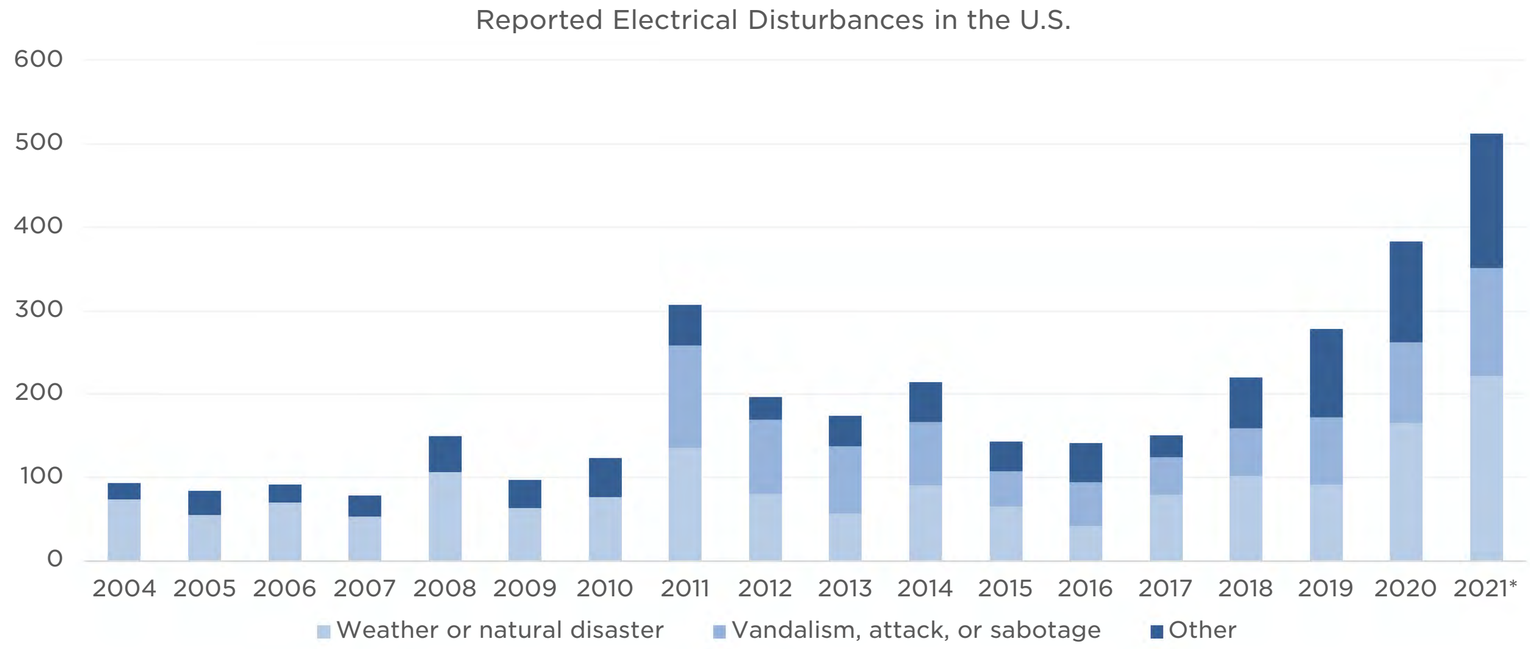
Solar + Storage Product
Improving Resilience Of The Grid

Grid outages are becoming more common

Electrical disturbances in the U.S. are becoming more common, predominantly due to weather and natural disasters. According to the U.S. Department of Energy, electrical disturbances cost businesses $150 billion per year. It is not surprising that homeowners and businesses are increasingly turning to backup power supply options. Our solar and energy storage products are a great way to reduce emissions while also ensuring backup power during outages.

Low cost is key to mass adoption

We are continuously working on reducing the cost of our products in order to foster mass adoption. Ultimately, using renewable energy (such as solar or wind) with battery storage will become the cheapest energy option available, regardless of location. This is already the case in many, but not all, locations around the world. As the cost continues to decline, more customers will be able to financially benefit from turning to renewable energy.



Source: U.S. Department Of Energy, Pew Charitable Trusts

[1] Includes cases of suspicious activity.

[2] Other includes all disturbances that are not clearly identified as weather, natural disaster, vandalism, attack or sabotage.

*Full year figure is a Tesla estimate calculated using data from the first six months of 2021 extrapolated based on historical trends.

Supply Chain

What do we see as impact?

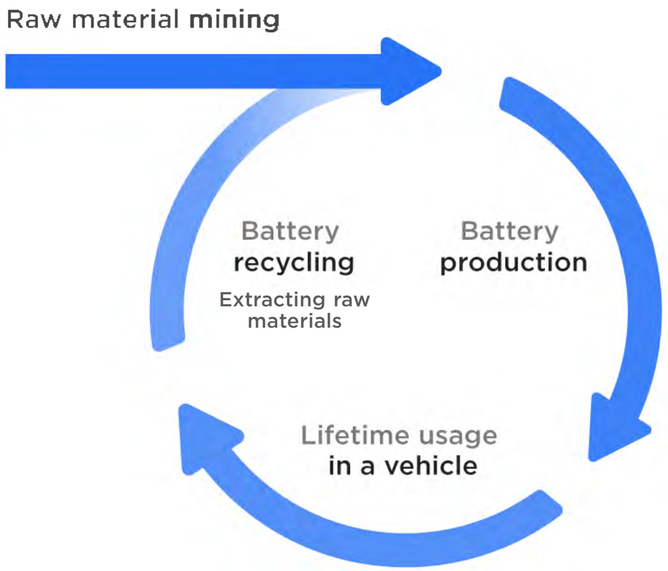
Protecting human rights and the environment is core to our procurement strategy. Tesla creates our products from many different materials and components, some of which we purchase from our direct (Tier 1) suppliers. Many of our Tier 1 suppliers do not purchase all their raw materials directly, rather they get them from their suppliers and sub-suppliers around the world through a complex supply chain. Though we believe that battery recycling will play a critical role in supplying a portion of these materials to enable a closed loop supply chain, we recognize that global battery cell production will continue to rely heavily on primary, mined materials to meet the growing demand for our products.

In line with our mission to accelerate the world's transition to sustainable energy, Tesla is committed to ensuring that companies in our supply chain respect human rights and protect the environment. Our goal is that where Tesla's supply chain touches, local conditions for stakeholders continuously improve as a result of our purchases. Our responsible sourcing strategy has the following objectives:

1. Increase the share of materials we source directly from suppliers, and those closer to our factories (supply chain localization); and
2. Continue to source globally, to contribute to the improvement of local conditions in our sourcing communities.

Mapping GHG emissions in the battery supply chain is one of our top priorities

Upstream GHG emissions from manufacturing an EV battery – from raw material extraction through refining and transportation of materials – can be meaningful. We estimate that these specific activities cause up to ~80% of the total emissions of a Model 3 battery pack, with the largest contributors at the chemical processing stage. Our battery supply chain GHG emissions hotspot analysis – an industry first – is on page 104 of this report.



A common question we receive is: “What happens to Tesla battery packs once they reach the end of their life?” An important distinction between fossil fuels and lithium-ion batteries as an energy source is that while fossil fuels are extracted and used once, the materials in a lithium-ion battery are recyclable. When petroleum is pumped out of the ground, chemically refined and then burned, it releases toxic emissions into the atmosphere that are not recoverable for reuse. Battery materials, in contrast, are refined and put into a cell and will remain in the cell at the end of their life when they can be recycled to recover valuable materials for reuse, repeatedly.

Longer battery longevity is the most sustainable option

Battery pack life extension is the superior option to recycling for both environmental and business reasons. Before decommissioning and recycling a consumer battery pack, Tesla does everything it can to extend the useful life of each pack, including sending out over-the-air software updates to Tesla vehicles to improve battery efficiency when our engineers find new ways to do so. In addition, any battery that is no longer meeting a customer’s needs can be serviced at a Tesla Service Center.

Every battery used in R&D or returned from the field that cannot be re-manufactured is recycled

Tesla batteries, including the battery packs in our vehicles and our energy storage products, are made to last many years, and therefore, we have received a limited number of them back from the field. Most batteries that Tesla recycles today are pre-consumer, coming to us through R&D and quality control. None of our scrapped lithium-ion batteries go to landfills and 100% are recycled. Furthermore, Tesla has an established internal ecosystem to re-manufacture batteries coming from the field to our Service Centers. We actively implement circular economy principles and consider all other options before opting for battery recycling.

The small number of post-consumer batteries that we receive are primarily generated from our fleet of vehicles on the road, predominantly from taxi-like vehicles. Since we have only been producing Model S (our oldest model) for approximately ten years, and our energy storage products for even less time, it will likely be some time before we start receiving back vehicle batteries in larger volumes.

Supply Chain

Recycling

Global annual amount of lithium-ion battery metals sent for recycling

1,500
Tons of Nickel

300
Tons of Copper

200
Tons of Cobalt

A closed-loop battery recycling process presents a compelling solution to move energy supply away from the fossil-fuel based practice of take, make and burn, to a more circular model of recycling end-of-life batteries for reuse over and over again.

While Tesla works with third-party recyclers, we also recycle in-house

In 2020, Tesla successfully installed the first phase of our cell recycling facility at Gigafactory Nevada for in-house processing of both battery manufacturing scrap and end-of-life batteries. While Tesla has worked for years with third-party battery recyclers to ensure our batteries do not end up in a landfill, we understand the importance of also building recycling capacity in-house to supplement these relationships. On-site recycling brings us one step closer to closing the loop on materials generation, allowing for raw material transfer straight to our nickel and cobalt suppliers. The facility unlocks the cycle of innovation for battery recycling at scale, allowing Tesla to rapidly improve current designs through operational learnings and to perform process testing of R&D products. By the end of 2021, this facility achieved a production rate of over 50 tons of recycled material per week.

Every Tesla battery factory will recycle batteries on-site

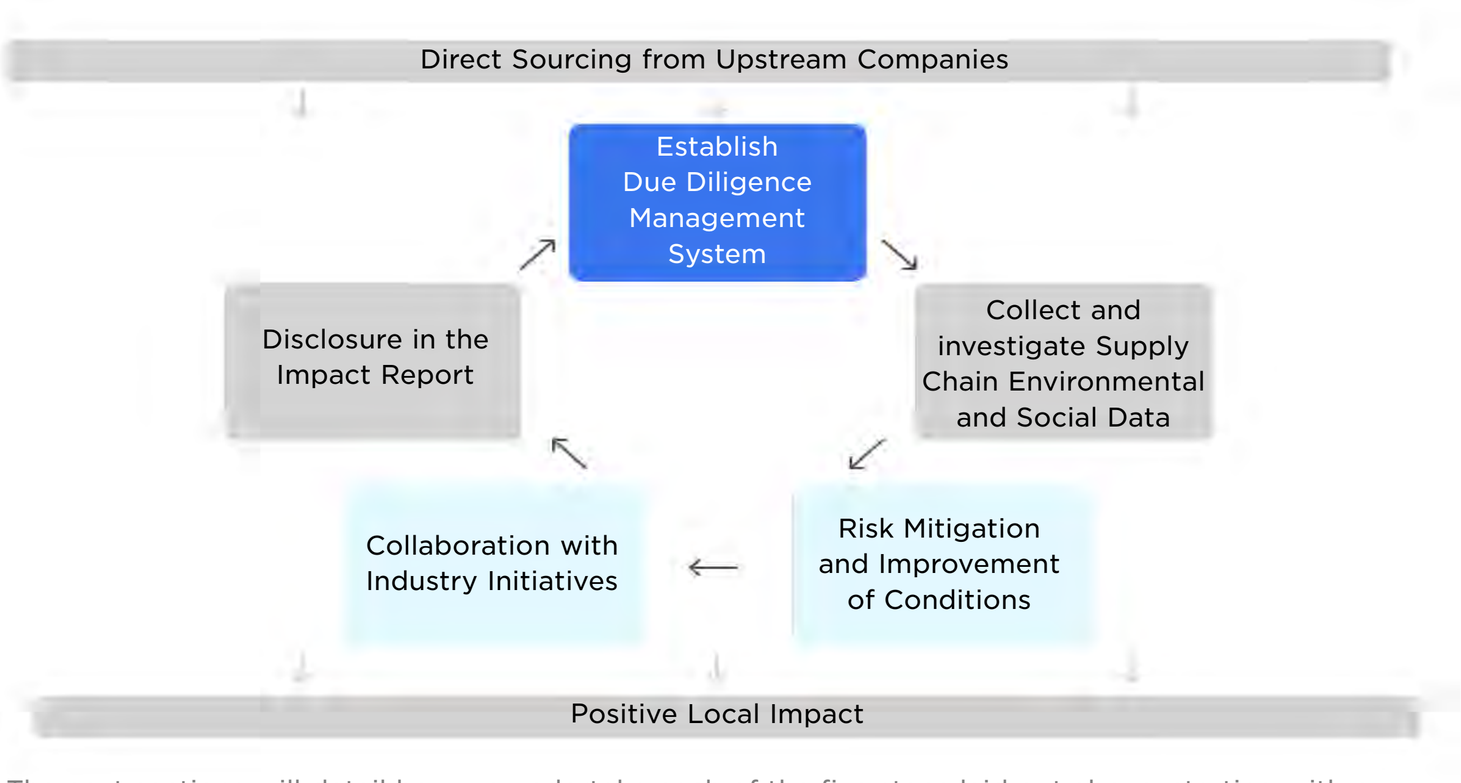
As the manufacturer of our in-house cell program, we are best positioned to recycle our products efficiently to maximize key battery material recovery. With the implementation of in-house cell manufacturing at Gigafactory Berlin-Brandenburg and Gigafactory Texas, we expect substantial increases in manufacturing scrap globally. We intend to tailor recycling solutions to each location and thereby re-introduce valuable materials back into our manufacturing process. Our goal is to develop a safe recycling process with high recovery rates, low costs and low environmental impact. From an economic perspective, we expect to recognize significant savings over the long term as the costs associated with large-scale battery material recovery and recycling will be far lower than purchasing additional raw materials for cell manufacturing.

We have high expectations for our suppliers

Tesla is committed to ensuring that our suppliers operate responsibly. We do this by proactively identifying and addressing potential risks in our supply chains. The Tesla Supplier Code of Conduct, Human Rights Policy and Responsible Materials Policy outline Tesla's expectations for suppliers.

We established a responsible sourcing program based on international best practices

Our responsible sourcing program is based on the OECD Due Diligence Guidance for Responsible Mineral Supply Chains. Tesla collects data from its supply chain (including through audits), translates this data into on-the-ground actions and discloses the outcomes in our annual Impact Report.



The next sections will detail how we undertake each of the five steps laid out above, starting with our management system approach.

Prioritization of cobalt, lithium and nickel

Given their unique significance to the success of EVs and energy storage, Tesla has a dedicated responsible sourcing program for three priority minerals in the battery supply chain: cobalt, nickel and lithium. We prioritize these raw materials for the following reasons:

1. Commercial importance: Cobalt, lithium and nickel are the key raw materials used in cathode production, represent about a third of the total costs of a battery cell and play an essential function in improving vehicle range and safety performance.

2. Potential environmental and social impact and scrutiny: Cobalt, lithium and nickel are also ‘minerals’ – in that they are raw materials that are produced through different methods of mining around the world, often concentrated in countries that face socio-economic and environmental challenges. As known global reserves are depleted, these minerals are becoming increasingly scarce, and companies look to access resources in more remote and challenging locations to meet global demand. Cobalt, lithium and nickel are also classified as critical minerals by the United States, European Union and Canadian governments because they are essential in enabling a transition away from fossil fuels to a low-carbon economy. As a result, the impact of mining activity on the environment and local communities lends itself to greater environmental and social scrutiny from civil society, policymakers and investors.

Mining has an important role to play in the transition to sustainable energy and we engage with suppliers to ensure mining is done in a responsible way. This is one of the reasons Tesla joined the Initiative for Responsible Mining Assurance (IRMA) and uses the IRMA Standard as well as other internationally recognized responsible mining standards in our due diligence.

>95%
Lithium hydroxide sourced directly

>50%
Cobalt sourced directly

>30%
Nickel sourced directly

The unique Tesla approach: Going directly to the source

The implementation of an OECD-aligned approach for cobalt, nickel and lithium is underpinned by the following two pillars:

1. Direct sourcing from mining companies: While cobalt, nickel and lithium go through multiple processing steps by different companies, some of the more important environmental and social risks in this supply chain are present at mine sites. Direct sourcing from mining companies allows Tesla to engage directly in local contexts instead of having to rely on multiple midstream companies that typically sit between EV makers and mining. It also enables more transparent and traceable supply chains and better environmental and social data. In 2021, Tesla procured >95% of lithium hydroxide, >50% of cobalt and >30% of nickel for nickel-containing (NCA and NCM) cells directly from nine mining and chemicals companies. All nine binding contracts include environmental and social requirements. As Tesla's battery supply chain continues to scale, Tesla expects the proportion of directly sourced minerals to increase.

2. Direct local engagement: Building on direct supplier engagement, Tesla seeks to contribute to the continuous improvement of conditions in communities affected by operations in Tesla's supply chain, informed by engagement with local experts, community organizations and civil society.

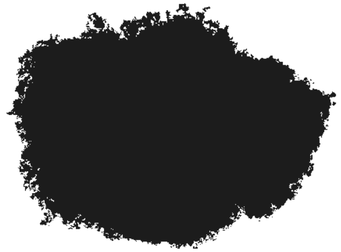
Our diversified cathode strategy

Tesla's batteries today contain a variety of different cathode chemistries, including nickel-cobalt-aluminum (NCA) and nickel-cobalt-manganese (NCM) for higher energy applications and lithium iron phosphate (LFP) for lower energy applications. Tesla will continue to advance a diversified cathode strategy for LFP, nickel-rich and manganese-rich cathodes to address various market segments for vehicle and energy storage products and provide future flexibility based on raw materials availability and pricing. To put this into context, lithium only accounts for roughly 1.5% of the full battery pack weight. Additionally, iron phosphate battery packs contain no cobalt or nickel.

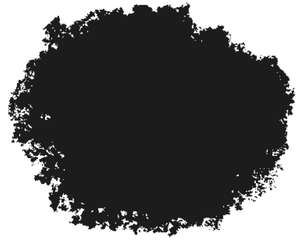
While the relative cathode compositions and our overall demand of various minerals and battery-grade chemicals will continue to evolve, Tesla and the global battery supply chain will require significant quantities of responsibly produced lithium, nickel, cobalt, manganese, iron, phosphates and many other minerals for the foreseeable future. While we recognize the critical role battery recycling will play in supplying a portion of these materials to enable a closed loop supply chain, global cell production will continue to rely heavily on primary, mined materials to meet the growing demand in the short to medium term. The availability and affordability of these minerals and chemicals are key to advancing Tesla's mission and accelerating the transition to sustainable energy. We will continue to collaborate with our suppliers and upstream producers in providing visibility to enable the scale up of key battery minerals.

For cells containing NCA and NCM cathodes, we continue to work toward batteries that contain higher levels of nickel in order to improve vehicle range while lowering overall battery costs, without compromising overall cell performance, such as battery safety and lifetime, that is currently enabled by cobalt. It is important to note that we expect our absolute cobalt demand to increase over the coming years because our vehicle and cell production growth rate is forecasted to outpace the overall rate of cobalt reduction on a per cell basis.

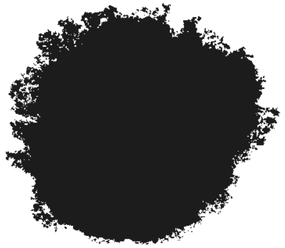
Nickel-Cobalt-Aluminum Cathode



Nickel-Manganese-Cobalt Cathode



Lithium-Iron-Phosphate Cathode



Battery Supply Chain
#2 Risk Identification

100%

Refiners and mine sites in Tesla's cobalt, nickel and lithium supply chains that we directly sourced from underwent or have committed to undergo independent third-party sustainability audits

83%

Of all refiners and mine sites in Tesla's cobalt, nickel and lithium supply chains underwent, or have committed to undergo, independent third-party sustainability audits

Collect and review environmental and social data to identify risks

In the past year, Tesla collected environmental and social data in its cobalt, lithium and nickel supply chains through the following main activities:

2.1 Audits

Audits are an important tool for Tesla to gather environmental and social data for cobalt, nickel and lithium.

- In 2021, 83% of refiners and mine sites in Tesla's supply chain, including 100% of refiners and mine sites from whom Tesla sources directly, either underwent or committed to undergo independent external sustainability audits against one of the following sustainability and responsible mining standards: IRMA Standard, the Responsible Minerals Initiative (RMI) Responsible Minerals Assurance Process (RMAP), Towards Sustainable Mining (TSM) and/or the International Council on Mining and Metals (ICMM) Performance Expectations.
- In addition, Tesla conducted six audits in the battery supply chain tailored to Tesla's specific environmental and social requirements, including the OECD guidance and environmental management systems. Tesla also has an audit program that goes beyond the battery supply chain – please see pages 112 - 115.
- Tesla also reviews suppliers' ISO14001 (environmental management) and OHSAS 18001 (occupational health and safety) certification statuses.

2.2 Continued supply chain mapping

Tesla used a newly developed Know-Your-Supplier (KYS) Questionnaire to map our battery supply chain and collect information related to suppliers' environmental and social management systems.

The table below lists all our direct supplier relationships in the battery supply chain.

Supplier	Material	Country	Type	Independent External Sustainability Assessment[1]	Life-Cycle Analysis (LCA) Completed[2]
Albemarle	Lithium	Australia (mine); China (refinery)	Integrated Mine Site + Refiner		
Livent	Lithium	Argentina (mine); China, USA (refinery)	Integrated Mine Site + Refiner		
Ganfeng	Lithium	China	Refiner	N/A[3]	
Yahua	Lithium	China	Refiner	N/A[3]	
Guizhou CNGR	Cobalt, Nickel	China	Refiner		
Hunan CNGR	Cobalt, Nickel	China	Refiner		
Huayou	Cobalt, Nickel	China	Refiner		
Glencore Kamoto Copper Company	Cobalt	Democratic Republic of Congo (DRC)	Mine site		
Glencore Murrin Murrin	Nickel	Australia	Integrated Mine Site + Refiner		
BHP Nickel West	Nickel	Australia	Integrated Mine Site + Refiner		
Prony Resources	Nickel	New Caledonia	Mine site		
Vale	Nickel	Canada	Integrated Mine Site + Refiner		

[1] Independent external sustainability assessments included: Initiative for Responsible Mining Assurance (IRMA), the Responsible Minerals Initiative (RMI) Responsible Minerals Assurance Process (RMAP), and/or the International Council on Mining and Metals (ICMM) Performance Expectations, Towards Sustainable Mining (TSM)
[2] This column refers to LCAs conducted by the supplier (not Tesla).
[3] There is currently no industry-wide 3rd party audit program for lithium refiners.

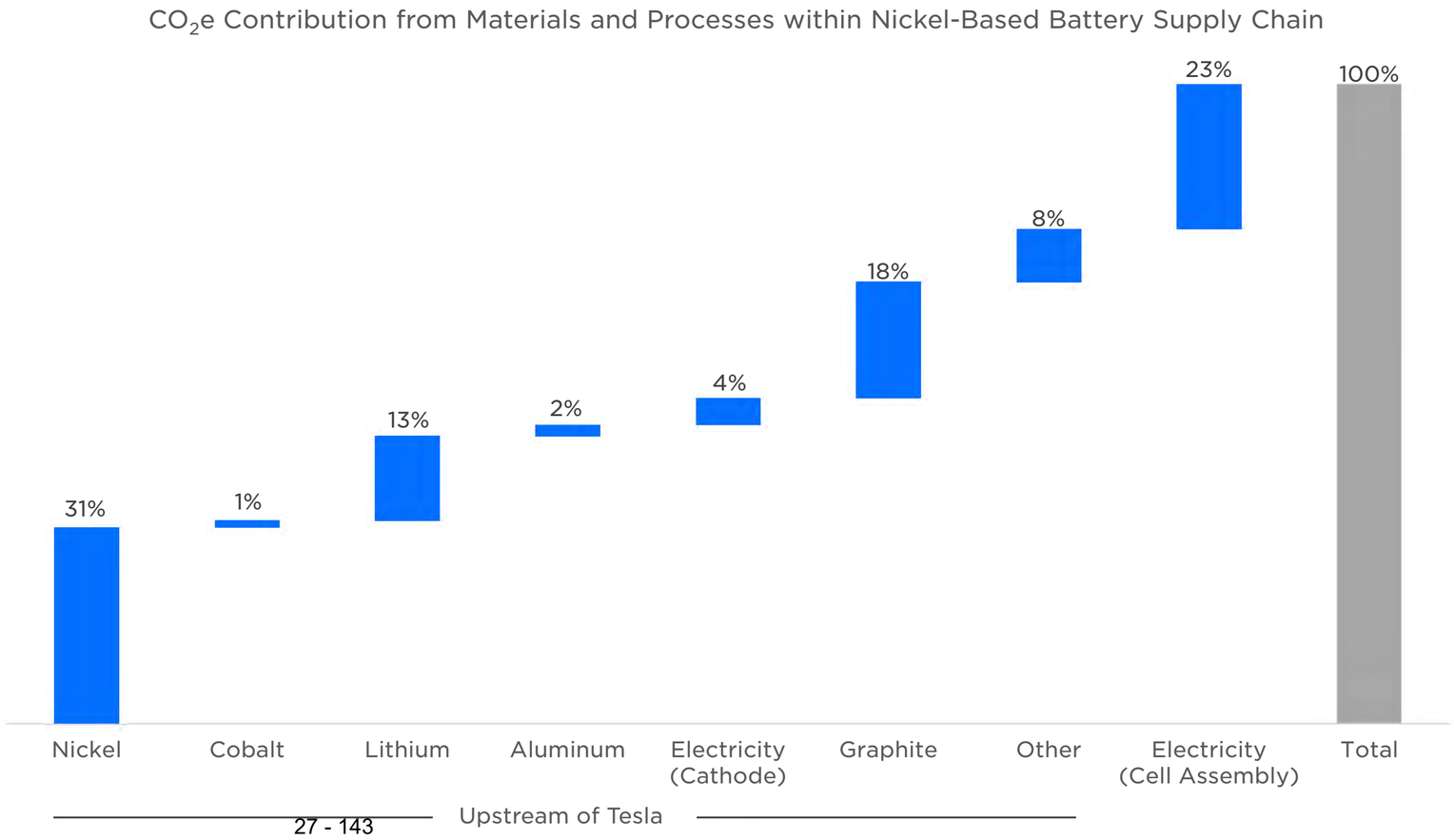
Legend

	Completed
	In progress / planned / commitment made
	No commitment / undisclosed

2.3 GHG emissions hotspot identification

In addition to the product-specific LCA described in the Environmental Impact section, Tesla also commissioned LCA service provider Minviro to identify hotspots with high global warming potential across eight specific processing routes from which we currently source cobalt, nickel and lithium.

The hotspot analysis found that main drivers of GHG emissions depend on the different battery compositions, processing routes and countries of origin. Overall, key drivers are the cathode and anode supply chains. Within the cathode supply chain, the hotspots are nickel and lithium, and cobalt was only a minimal contributor. Within the cobalt, nickel and lithium supply chains, chemical processing (refining / smelting) was a larger driver than mining.

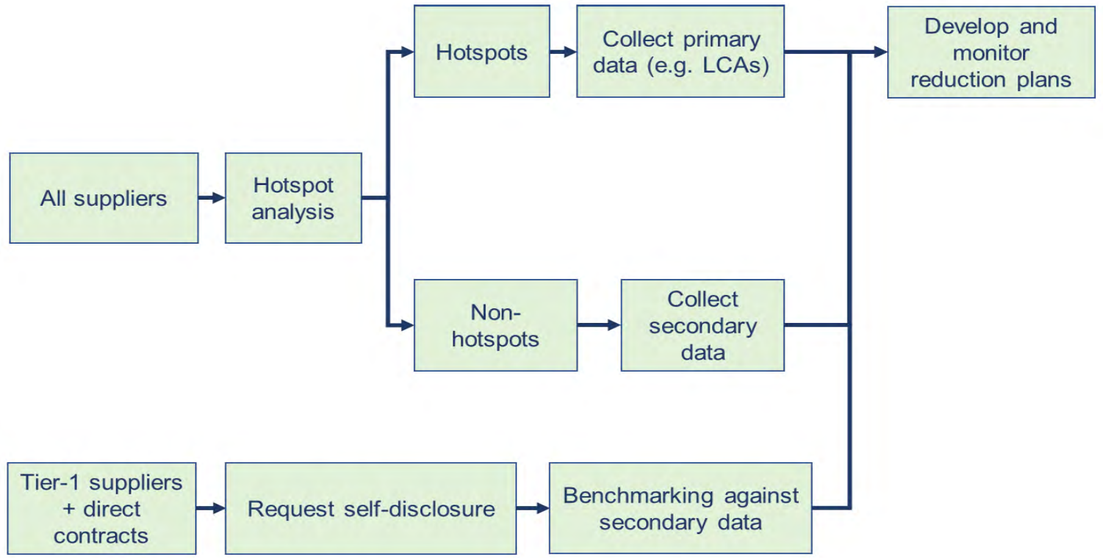


2.3 GHG emissions hotspot identification

Tesla complemented the hotspot analysis with data collected during a pilot blockchain traceability project for nickel sourced from Tesla nickel supplier, BHP, that traced nickel from a mine site in Australia to Tesla and collected GHG emissions data for every step. The pilot project showed that mining and upstream processing had a higher CO_2e intensity than precursor, cathode and battery cell production.

Building on this hotspot analysis and pilot project, Tesla developed a data collection methodology aligned with the GHG Protocol – a globally recognized standard for measuring GHG emissions – and informed by the European Product Environmental Footprint methodology and the Product Environmental Footprint Category Rules (PEFCR) guidance for batteries — a set of rules developed by the European Union on calculating product-specific environmental footprint. Instead of relying on estimates or aggregate data from third parties, Tesla's ambition is to collect as much primary data from Tesla's suppliers as possible to get the most accurate understanding of GHG emissions hotspots and therefore, how to reduce emissions.

Approach to Supply Chain Data Collection for GHG emissions



2.4 Reports from non-governmental organizations (NGOs) and local stakeholders

Reports and grievances from NGOs and community organizations as well as media articles are other important sources for potential environmental and social risk information. Tesla reviews allegations in detail and conducts its own investigations, including through direct bilateral engagement with relevant suppliers and with the parties making the allegations, to assess the severity of the risk and possibilities for risk avoidance or corrective actions.

2.5 Visits to the Democratic Republic of Congo (DRC) and Argentina

A Tesla delegation including members of Tesla's Responsible Sourcing Committee visited suppliers in the DRC and Argentina. Both trips included visits to mine sites and meetings with community representatives. In the DRC, Tesla also visited a school, an orphanage and a maternity clinic. Aside from contributing to Tesla's environmental and social risk assessments, the trips helped Tesla better understand local contexts and challenges. The DRC trip provided a more nuanced view of the complex issue of artisanal and small-scale mining (ASM) and its history within the DRC. In Argentina, the trip focused on questions related to water usage and the use of new technologies to extract lithium in a more energy-efficient way.

From all the activities listed in this section, Tesla identified six risk areas as well as cross-cutting topics in cobalt, lithium and nickel supply chains for prioritized engagement, described in Step 3, on the next page.

Visiting a lithium extraction site in Argentina

Visiting a cobalt mine site in the DRC

Environmental and social risk mitigation and improvement of conditions

As a result of the activities listed in Step 2, Tesla identified the following focus areas for risk mitigation and improvement of local conditions at or around cobalt, nickel and lithium mine sites in Tesla's supply chain:

Priority area	Examples of actions taken by Tesla
Fair working conditions and occupational health and safety	Tesla reviewed • A supplier's occupational health and safety system • A supplier's digital system to monitor the risk of unavoidable landslides • Evidence of progress towards the elimination of safety-related incidents • Minutes from community meetings to raise awareness around safety risks related to landslides and trespassing • A supplier's commitment to conduct a Human Rights Risk and Impact Assessment (HRRIA)
Protecting water levels and water quality in waterways affected by supplier operations	Tesla reviewed • Data on water levels and water quality, including environmental surface water monitoring sheets • Evidence that potential sources for acid leaks were decommissioned or re-engineered • Minutes from community meetings to raise awareness of potential sources of water pollution and mitigation measures • Written assurance that water is not discharged to water sources for nearby communities Tesla also met with community representatives to confirm that a supplier's usage of freshwater does not impact communities' water access. For another supplier, Tesla participated in the establishment of a committee of independent environmental experts to assess and work with the supplier on environmental risk management.
Co-existence between industrial and artisanal mining operations	Tesla reviewed • Evidence for a supplier's government engagement in support of artisanal mine site legalization • Evidence for investments into initiatives supporting responsible artisanal mining Tesla also met with representatives of artisanal mining communities and provided funding to initiatives supporting responsible artisanal mining (see page 109).

15
Refiners, smelters and mine sites in Tesla's battery supply chain disclosed they conducted an LCA

55
Corrective actions agreed to with suppliers related to their sustainability management processes

Environmental and social risk mitigation and improvement of conditions

As a result of the activities listed in Step 2, Tesla identified the following focus areas for risk mitigation and improvement of local conditions at or around cobalt, nickel and lithium mine sites in Tesla's supply chain:

Priority area	Examples of actions taken by Tesla
Protection of forests and biodiversity	Tesla reviewed • A supplier's area of operation in relation to nearby forest areas • A supplier's reforestation and rehabilitation plans • Written assurance that mining activities did not take place in rainforest areas • Environmental impact assessments
Community consultation and engagement and protection of indigenous rights	Tesla directly engaged with representatives of communities affected by mining operations to review that regular engagement and consultation take place and community needs are responded to. Tesla also reviewed • Meeting minutes to ensure communities were regularly consulted • Evidence for a best-practice Free, Prior and Informed Consent (FPIC) process, including in coordination with responsible government authorities
GHG emissions reduction and air pollution	Tesla's approach to GHG emissions data collection (see Graph in Step 2) is currently being implemented. The data collected will inform the development of concrete actions to reduce Tesla's Scope 3 emissions. • Based on an initial review, 15 refiners and mine sites in Tesla's supply chain disclosed that they conducted an LCA
Cross-cutting	Across all risk areas identified, Tesla • Reviewed suppliers' audit frameworks to ensure upcoming audits will cover all areas identified above • 55 corrective actions agreed to with suppliers related to suppliers' environmental and social management processes • Expanded environmental and social requirements in supplier contracts, for example related to responsible mining standards, LCAs, GHG emissions footprint disclosure, and transparent and proactive risk disclosure • Developed a formal technical collaboration on sustainability with a supplier

Fair Cobalt Alliance
L'Alliance du Cobalt Equitable

Attendees of a first aid training organized by the FCA in the DRC

Tesla's engagement in the DRC and the Fair Cobalt Alliance (FCA)

The DRC is an important source of cobalt for Tesla batteries. We will continue supporting sourcing from the DRC provided our responsible sourcing standards are met. While Tesla does not source cobalt from Artisanal and Small-Scale Mining (ASM), we recognize the importance of ASM for local livelihoods. This is why Tesla provides funding to, and sits on, the Steering Committee of the Fair Cobalt Alliance (FCA), a multi-stakeholder initiative to support the improvement of conditions in communities impacted by artisanal mining through the following activities:

- Occupational health and safety awareness raising campaign for mine workers
- First aid training for mine workers and selection of safety captains
- Distribution of protective equipment to washer women
- Creation of savings groups for mining community members paired with financial literacy training
- Development of referral system for children engaged in mining activities, including child labor notification protocol, remediation solution packages, and guidelines for case managers on remediation steps, in collaboration with the NGO, Save the Children
- Trainings related to child rights
- Electrification of five schools covering students through the distribution of solar-chargeable portable lamps
- A marketplace and football field selected for the placement of lighting poles

Collaboration with industry initiatives

Tesla understands that many of the environmental and social issues in global EV supply chains do not concern Tesla, alone. Tesla is actively engaging in multi-stakeholder forums and industry groups to find industry-wide solutions to industry-wide questions:

- Initiative for Responsible Mining Assurance (IRMA): Tesla joined IRMA as a Member in 2021 to support responsible mining practices and transparent and robust audit processes that emphasize community interviews. It is important to Tesla that NGOs and communities actively participate in third-party audits of mines against the IRMA Standard, as their perspectives provide greater context on mining operations and the impacts of extraction, while also increasing accountability and identifying opportunities for improvement.
- Global Battery Alliance (GBA): Tesla has been involved in the GBA since 2020 and has served on the GBA Board and Battery Passport Steering Committee since 2021. Tesla's goal as part of the GBA is to advocate for high standards for responsible battery materials sourcing, align with EU regulatory requirements, and support the development of actionable guidance related to GHG emissions data collection, recycling, and in-country environmental and social projects.
- Responsible Minerals Initiative (RMI): Tesla is a member of the RMI to support the RMI's refiner audit programs and industry-wide responsible sourcing dialogue.
- IFC Net Zero Roadmap Working Group: Tesla has participated in the IFC Working Group since early 2022 to provide a downstream perspective in the development of actionable guidance for mine sites to reduce carbon emissions.
- Re|Source: Tesla participates in the supply chain-wide Re|Source consortium to pilot blockchain-supported traceability in the cobalt supply chain. Tesla offers insights from an OEM perspective on metrics critical to traceability efforts and works with the consortium towards the first end-to-end blockchain-enabled tracing of cobalt material starting from Tesla's supplier in the DRC to Gigafactory Shanghai.
- Fair Cobalt Alliance (FCA): Please see the previous page.

Outlook for battery supply chain responsible sourcing: Formalization and expansion

Tesla's battery responsible sourcing program is still relatively new. Yet, the program has achieved several important milestones this last year, including the development and initial implementation of a system to identify environmental and social risks in the battery supply chain and concrete progress towards mitigation and improving the situation of stakeholders impacted by Tesla's battery supply chain.

In 2022, Tesla plans to continue building on momentum of the program and improve on the data points shared in this report, including the development of supply chain GHG emissions reduction plans and further projects and investments in mining countries to have a positive environmental and social impact. Tesla will then explore an expansion to manganese, graphite, copper and mica.

Tesla's Supplier Audit program

In 2018, Tesla initiated its Supplier Audit program with the objective to extend our supplier performance evaluation to key environmental and social impact metrics relevant to Tesla's business. This program extension was introduced at the time when Tesla was transitioning from a small automotive manufacturer to a company gaining recognition as the leader in electrical vehicle production. We recognized that this growth came with an increased ability to impact positive change on the practices of our suppliers, but also with an increased responsibility to drive such change in line with our mission statement. During the program pilot phase, we focused our efforts on suppliers that we deemed high risk based on their industry or the use of potentially dangerous processes and/or chemicals in the manufacturing of our parts.

We chose to utilize the Responsible Business Alliance's (RBA) Validated Assessment Program (VAP) as the basis for our audits. The RBA's VAP is an audit protocol globally recognized for its breadth of topics and stringent requirements for supplier completion. It covers nearly 200 checkpoints across labor, health and safety, environmental, ethical and management system topics. Audits are conducted by independent third parties that are approved by the RBA, and all auditors must undergo training by the RBA on the audit standard and its implementation ensuring a globally and industry-wide standardized approach.

In any case where any priority non-conformance (the most significant type) occurs, our audit procedures require that suppliers undergo a closure audit. These closure audits – which are a follow up to the original audit where the non-conformances were identified – allow suppliers to address all non-conformances in the earlier audits. Additional audits, rather than an immediate suspension of the business relationship, are preferred to improve working conditions and reduce the risk of continued deficiencies.

As of the end of 2021, we had a total of 152 supplier locations go through our supplier audit at least once, representing 144 suppliers, or 10% of 2021 spend with our direct supply base. As part of these audits over 4,000 supplier employee interviews were conducted.

Continuing to expand our audit program

In 2021, Tesla redefined its criteria for determining which of our suppliers are subject to the Supplier Audit program. While in its initial stages the suppliers subject to the audit were mainly located in China, and the updated criteria expanded the scope to include significantly more suppliers globally. When we started our audit program, we had only just announced our plans for Gigafactory Shanghai. We now have six factories across three different continents, and our production volume of vehicles has grown exponentially. As our global footprint and manufacturing grew, so did our supply base. Therefore, the expansion of our audit program was an important step to ensure that our supplier due diligence efforts continue to reflect the realities of our supply chain and can properly identify and address potential risks within our supply base.

The criteria on which suppliers are selected to undergo the Supplier Audit is based on an expanded risk assessment approach, looking at Tesla's exposure to suppliers financially, as well as suppliers' location. This criteria determines which suppliers are obligated to undergo an audit, but additional suppliers can be nominated by our commercial and supplier industrialization teams where they see value in doing so or the potential to further mitigate risk. With the expanded audit program scope, we are targeting to cover over 50% of our global spend with our direct supply base.

As part of our program expansion, we are building on our ability to influence supplier behavior in a positive way. When a supplier is not meeting our expectations, they are obligated to implement corrective action plans to remedy any deficiencies or non-conformances found during the audit process, regardless of the severity. In cases of the highest priority non-conformances, suppliers are required to undergo closure audits to ensure that their corrective action plans have been fully implemented. In cases of less severe non-conformances, suppliers are still required to develop and implement corrective action plans as well as provide evidence to Tesla that those plans have been fully implemented within our expected timelines.

Furthermore, we defined a separate category called Zero Tolerance Violations, which, for example, include any violations related to the use of forced or child labor and inhumane treatment of workers. In cases where such instances are discovered, our supply chain leadership will be informed, and a corrective action plan will be developed immediately, together with the supplier. Tesla will transition away from the supplier relationship if the supplier is unable or unwilling to correct the identified issues and improve their operations within a reasonable time frame.

How we identify and prioritize risks in our supply chain

Our Supplier Audit program is an important part of our efforts to identify and address environmental and social risks within our supply chain. These audits allow for a snapshot of a supplier facility's programs and procedures, but also sets a baseline for future evaluations. Additionally, Tesla utilizes other avenues to evaluate potential risks in our supply chain such as those detailed below.

We engaged with several third-party service providers allowing us to continually monitor our supply chain for emerging issues that may affect our suppliers. These include issues related to labor relations, human rights and environmental degradation. This monitoring allows our Global Supply Managers to be notified as soon as information about suppliers becomes public and act by engaging directly with the supplier to understand their plans for correcting the identified risk.

Tesla follows the OECD Due Diligence Guidance for Responsible Business Conduct when identifying risks within our supply chain. We require suppliers to cooperate with our efforts and assist in identifying and removing practices within our supply chain that are contradictory to our policies. Our responsible sourcing policies require suppliers to provide requested information regarding potential violations of our policies. Furthermore, we continue to leverage our membership with the RBA to identify upcoming supply chain risks as well as understand industry best practices to address them. We are actively involved with the RMI as well as specific action groups within the organization. In addition, we have utilized many of the RBA tools, such as country risk analysis to understand inherent risks in our supply chain and RBA-Online to collect information on corporate and factory-specific supplier performance.

Across all audits, we found no instances of child labor, forced labor or inhumane treatment of workers

The table below details findings of our audits across all suppliers regardless of severity and includes initial audits as well as closure audits. Through July 2021, our suppliers have addressed and remedied 100% of priority non-conformances, with the remaining open priority findings to be addressed in upcoming closure audits. Our initial focus on high-risk suppliers allowed us to cover more than 70% of this group in the first three years of the audit program and gave us an understanding of suppliers to prioritize in an expanded program.

In all audits conducted at Tesla's request at supplier manufacturing facilities producing Tesla products, we found no instances of child labor, forced labor or inhumane treatment.

Supplier Audit Findings (2018-2021)

	2018	2019	2020[1]	2021[1]
Audits Conducted	12	108	81	41
Average Non-Conformance per Audit	28	21	16	15
Breakdown of Findings by Topic (%)				
Labor	30%	30%	31%	37%
Health & Safety	30%	27%	30%	33%
Environment	14%	14%	13%	14%
Ethics	6%	4%	2%	1%
Management Systems	20%	25%	24%	15%
Total	100%	100%	100%	100%

In 2021, the five most common findings were related to (% of total findings within each category)[2]:

1. Working Hours (20.4%): no more than 60 hours work per week, overtime is voluntary, one day off per seven days
2. Emergency Preparedness (11.1%): proper permitting, emergency risk assessment at 11.1% of total findings;
3. Wages and Benefits (9.4%): proper calculation of regular and overtime wages, timely payment of wages;
4. Occupational Safety (7.5%): availability of PPE, proper permitting; and
5. Freely Chosen Employment (5.5%): contract provided in worker's native language, no excessive penalty for leaving position

[1] Over the past two years, global pandemic conditions have significantly impacted our suppliers' ability to schedule on-site audits, leading to a decrease in our annual audit numbers.
[2] The colors of percentages above indicate their inclusion in broader categories in the table. For example, Working Hours is a subcategory of Labor and, therefore, both are colored blue.

Supporting Materials

Summary – Corporate Governance

Topic	Description	Page(s)
Introduction	Sound corporate governance is critical to our mission. We are committed to establishing an operating framework that exercises appropriate oversight of responsibilities at all levels throughout the company and manages its affairs consistent with high principles of business ethics.	11 - 12
Our Approach to Corporate Governance	Our unique business requires a unique approach to corporate governance. And our mission requires a long-term focus that we believe will ultimately maximize value to our employees and our stockholders. Our corporate governance structure has facilitated several key decisions which might have appeared counter-intuitive to some, but which have set up the Tesla to achieve long-term success.	13
Board Committees (as of March 1, 2022)	The Board has four standing committees — the Audit Committee, the Compensation Committee, the Nominating and Corporate Governance Committee and the Disclosure Controls Committee — which are each further described in this section.	14 - 15
Compensation Philosophy	Our compensation philosophy reflects our long-term mission and our startup origins. We emphasize structuring compensation to reward our named executive officers based on performance, and equity awards weigh heavily in our named executive officers' total compensation, including awards that vest upon the achievement of clear and measurable milestones.	16
Data Privacy and Cybersecurity	Tesla builds products with privacy and security at their core. Additionally, managing data privacy is a shared task through all levels of our organization. Our privacy principles are: 1. We build privacy into our products from start to finish; 2. We give customers choices about their data; 3. We maintain trust through transparency; and 4. We safeguard personal data.	17 - 18
Human Rights	The ethical treatment of all people and regard for human rights is core to our mission of a sustainable future. We believe all businesses within our supply chain have a responsibility to share our respect for human rights. Our human rights policy is the formalization of our commitment to uphold and respect these rights and the values they represent. We have a zero-tolerance policy when it comes to child or forced labor and human trafficking by our suppliers.	19 - 20

Summary – People and Culture

Topic	Description	Page(s)
Introduction	Tesla's employees are its greatest asset and critical to achieving our mission. Our People Strategy is centered on providing meaningful work, a respectful, safe, inclusive and equitable workplace, compensating our people well, and making our benefits an outlier.	22
Attracting Employees	Our employee count has grown ~70 fold over the past decade and, in just over ten years, created nearly 100,000 direct jobs. Whether it is through our direct hiring opportunities, internships or workforce development programs, interest in joining Tesla's mission is at an all-time high. We had more than 3,000,000 unique applicants globally in 2021 alone.	23 - 27
Compensating Employees	Tesla provides a highly competitive wage that meets or exceeds the wages of comparable manufacturing roles, even before equity and benefits are factored in, and we want our benefits to be an outlier in the manufacturing industry. We have an annual pay equity program in place, designed to assess whether similarly situated employees are paid in a similar manner after accounting for a range of variables.	28 - 32
Retaining Employees	As Model 3 has become the best-selling premium sedan globally and our profitability (operating margin) has rose to the highest in the industry, employee satisfaction has improved. This has fueled our ability to expand dramatically and provide career opportunities for many strong performers. As nearly 70% of our leadership is promoted from within Tesla, our employees are surrounded by examples of successful progression.	33 - 34
Diversity, Equity and Inclusion	We are proud to be a majority-minority company with a large representation of employees from communities that have long struggled to break through the historic roadblocks to equal opportunity in the U.S. As of December 31, 2020, 34% of our directors and vice presidents are people of color. This year we published our latest EEO-1 data for the first time.	35 - 41
Respectful Workplace	We strive to create an environment where people love to come to work every day. With over 100,000 employees as of March 2022, challenges arise, and we address them head on. In 2021, we re-doubled our efforts to educate employees and managers that any form of discrimination must be reported.	42 - 43
Employee Engagement	Employee engagement drives productivity, satisfaction and loyalty and plays a critical role in employee retention. Tesla's engagement initiatives strive to make employees feel informed, valued and respected, while company-wide open-door policies with leaders empower employees to make their ideas heard.	44
Disaster Relief	We are committed to providing disaster relief through product donations. Our disaster relief efforts have provided 100% clean, emissions free emergency power to people in Ukraine, New Orleans after Hurricane Ida, and Kentucky and Texas after sever winter storms. We also provided free supercharging to customers in countries surrounding Ukraine.	45 - 46
Environmental, Health, Safety and Security	In 2021, our focus remained on protecting people, the planet, our property and products. We recently deployed our new EHS&S system – MyEHS – in order to better collect and manage data, allowing us to make decision that reduce risk. Furthermore, in 2021, our ATSM Global Serious Injury Rate remained below the industry average.	47 - 54

Summary – Environmental Impact

Topic	Description	Page(s)
Lifecycle Analysis of Tesla Vehicles versus Average ICE	Regardless of where they are driven (U.S., Europe or China), a Model 3 and Model Y emit far fewer greenhouse gas emissions per mile than a comparable ICE. Moving the grid toward more renewables and making our operations and supply chain less GHG intensive will only make this dynamic more pronounced as time goes on.	56 – 67
GHG Emissions: Scope 1, 2, 3	We have disclosed our full Scope 1 and Scope 2 (location-based) emissions this year. We have also disclosed the amount of CO2e emitted through the use of our vehicles (part of Scope 3). The global Supercharger network and home charging in California were both 100% renewable in 2021, achieved through a combination of onsite resources (for the Supercharger network only) and annual renewable matching.	68 – 69
NOx, Particulates and Other Pollutants	New research shows that fossil fuels are alone responsible for more than 8 million premature deaths annually, or almost one out of every five deaths globally, double previous estimates. Zero tailpipe emissions is a commonly overlooked benefit of EVs.	70
Tesla Semi's Impact on Emissions	Tesla Semi is poised to make a large impact: in the U.S., combination trucks make up just 1.1% of the vehicle fleet but account for 17.9% of annual emissions.	71
Waste Generated per Vehicle Manufactured	As we continue to build new, more efficient factories our ability to limit packaging and reduce waste increases. Waste generated per vehicle in Shanghai production is 60% less than our manufacturing in the U.S. We continue to push for innovative approaches to reducing waste as we expand our global operations.	72
Water Used per Vehicle Manufactured	Water use per vehicle produced by Tesla was again below the industry average in 2021. Our new factories such as Gigafactory Berlin-Brandenburg will set a new standard when it comes to low water use per vehicle.	73 - 74
Emissions Credits	In 2021, Tesla delivered more than 2x as many EVs as our next closest competitor, helping drive $1.5bn in revenue from selling regulatory credits. This money is being used to accelerate our production capacity deployment in direct support of our mission.	75

Summary – Product Impact

Topic	Description	Page(s)
Product Affordability (Price Equivalency & Total Cost of Ownership)	Model 3 is price competitively with ICE equivalents. But, when compared on a total cost of ownership basis, the Model 3 is much closer to a Toyota Camry on all-in cost per mile than to an ICE equivalent such as a BMW 3 Series.	77 - 78
Product Usage & Usability	Our data shows that Tesla vehicles are being driven more than average vehicles in the U.S., suggesting that they are generally being used as a customer's primary vehicle. The superior range of our vehicles and a robust global Supercharger Network makes this possible.	79 - 80
Vehicle Safety	At Tesla, safety features are not optional. Our full suite of safety features comes standard with every vehicle. When we design vehicles, first and foremost, we want them to be safe. Our active safety features are powered by eight cameras, a neural-net computer and learnings from our fleet of over two million cars.	81 – 84
Autopilot Safety	In 2021, we recorded 0.22 crashes for every million miles driven in which drivers were using Autopilot technology (Autosteer and active safety features). For drivers who were not using Autopilot technology (no Autosteer and active safety features), we recorded 0.77 crashes for every million miles driven. By comparison, NHTSA's most recent data shows that in the United States there are 1.81 automobile crashes for every million miles driven.	85
Data Driven Safety	Tesla strived to go beyond industry standard testing. We leverage data from our fleet of over two million cars to better understand accidents and build solutions around them.	86 - 87
Passive Safety & Tesla Safety Awards	Since 2019, Tesla vehicles earned 5-star ratings from safety rating agencies across the U.S., Europe and Australia.	88 - 89
Fire Risk	From 2012 to 2021, there has been approximately five Tesla vehicle fires for every billion miles traveled. By comparison, data from the National Fire Protection Association (NFPA) and U.S. Department of Transportation show that in the U.S. there are 53 vehicle fires for every billion miles travelled.	90
Solar + Storage Products	Pairing energy storage with renewables is required to transition our grid to zero-emission sources. In 2021, in order to meet demand that is well in excess of supply for energy storage products, Tesla began building a new production facility capable of producing 40,000,000 kWh of energy storage per year.	91- 92
Resilience of the Grid	Electric grid disturbances in the U.S. have increased dramatically over the last 15 years. Our solar and storage products not only deliver cost savings and energy independence, but they also harden the grid from adverse events in a cost-effective and environmentally friendly manner.	93

Summary – Supply Chain

Topic	Description	Page(s)
Introduction	Protecting human rights and the environment is core to our procurement strategy. Our responsible sourcing strategy aims to increase the share of direct procurement and continually improve local conditions of the communities from where we source.	95
Battery Recycling	Tesla is building capacity to recycle manufacturing scrap and end of life batteries in order to close the loop on battery raw materials. By the end of 2021, our battery recycling facility at Gigafactory Nevada achieved a production rate of over 50 tons of recycled material per week.	96 - 97
Alignment with Best Practices	Our responsible sourcing program is based on the OECD Due Diligence Guidance for Responsible Mineral Supply Chains. This means Tesla collects data from its supply chain (including through audits), translates this data into on-the-ground actions and discloses the outcomes in our annual Impact Report.	98
Battery Supply Chain	We have prioritized responsible sourcing activities for cobalt, lithium and nickel given their unique significance to EVs and energy storage. To ensure we are appropriately managing risk, we continue to map our supply chain, conduct in third-party audits and on-the-ground engagements, and collaborate with industry initiatives to ensure our suppliers are living up to our strict standards.	99 - 111
Responsible Sourcing & Tesla Supplier Audit Program	In 2018, Tesla initiated its Supplier Audit program with the objective to extend our supplier performance evaluation to key environmental, social, and governance metrics relevant to Tesla's business. As of the end of 2021, we had a total of 152 supplier locations go through our Suppler Audit at least once, representing 144 suppliers, or 10% of 2021 spend with our direct supply base.	112 - 115

Appendix
Key Metrics

Average Lifecycle Emissions (gCO_2e/mi)

Delivery-weighted U.S. Average	Manufacturing Phase	use-phase	Total
Model 3 Ridesharing Use (solar charged)	29	0	29
Model 3 Personal Use (solar charged)	70	0	70
Model 3 Ridesharing Use (grid charged)	10	111	121
Model 3 Personal Use (grid charged)	51	111	162
Avg. Mid-Size Premium ICE	48	417	465

New York State	Manufacturing Phase	use-phase	Total
Model 3 Ridesharing Use (solar charged)	29	0	29
Model 3 Personal Use (solar charged)	70	0	70
Model 3 Ridesharing Use (grid charged)	10	78	88
Model 3 Personal Use (grid charged)	51	78	129
Avg. Mid-Size Premium ICE	48	417	465

Delivery-weighted Europe Average			
Model 3 Ridesharing Use (solar charged)	31	0	31
Model 3 Personal Use (solar charged)	100	0	100
Model 3 Ridesharing Use (grid charged)	12	48	60
Model 3 Personal Use (grid charged)	81	48	130
Avg. Mid-Size Premium ICE	47	417	464

Austria			
Model 3 Ridesharing Use (solar charged)	31	0	31
Model 3 Personal Use (solar charged)	100	0	100
Model 3 Ridesharing Use (grid charged)	12	35	47
Model 3 Personal Use (grid charged)	81	35	116
Avg. Mid-Size Premium ICE	47	417	464

Delivery-weighted China Average			
Model 3 Ridesharing Use (solar charged)	31	0	31
Model 3 Personal Use (solar charged)	100	23	123
Model 3 Ridesharing Use (grid charged)	12	172	184
Model 3 Personal Use (grid charged)	81	172	253
Avg. Mid-Size Premium ICE	47	417	464

Sichuan Province			
Model 3 Ridesharing Use (solar charged)	31	0	31
Model 3 Personal Use (solar charged)	100	4	105
Model 3 Ridesharing Use (grid charged)	12	33	45
Model 3 Personal Use (grid charged)	81	33	114
Avg. Mid-Size Premium ICE	47	417	464

Appendix
Key Metrics

GHG Emissions (tCO_2e)

Scope 1 & 2 Emissions	Scope 1	Scope 2 (location based)
Manufacturing	124,000	342,000
SSD	31,000	35,000
Other	30,000	26,000
Total*	185,000	403,000

Scope 3 Emissions	Use of Sold Product
Scope 3	1,954,000

Waste Generated in Manufacturing

Waste Generated in Global Manufacturing[1] (2021; tons)		Diverted from Disposal	Directed to Disposal
Hazardous Waste		14,432	20,502
Non-Hazardous Waste		254,541	15,701
Total Waste Generated		268,973	36,203

Waste Generated in Vehicle Manufacturing (2021; kg per vehicle)[2]		Diverted from Disposal	Directed to Disposal
Hazardous Waste		14	22
Non-Hazardous Waste		271	16
Total Waste Generated per Vehicle		285	38

Water Withdrawal for Manufacturing (cubic meters)

Total Fresh Water Withdrawal[1]	2019	2020	2021
Major Manufacturing Sites	1,765,374	2,082,163	2,874,904

Total Fresh Water Withdrawal per vehicle[2]	2019	2020	2021
Major Manufacturing Sites	2.43	3.10	3.02

Uptime of Tesla Supercharger Sites

Uptime of Supercharger Sites	2019	2020	2021
Uptime	99.90%	99.74%	99.96%

Vehicle Safety

Numbers of Vehicular Accidents per Million Miles Driven (2021)	Autopilot Engaged	No Active Safety
Tesla	0.22	0.77

Number of Vehicle Fires per Billion Miles Driven	2012 - 2019	2012 - 2020	2012 - 2021
Tesla	5.71	4.88	4.76

[1] Includes all major manufacturing sites: Fremont Factory and supporting facilities, Gigafactory Nevada, Gigafactory New York, Tesla Grand Rapids and Gigafactory Shanghai.
[2] Includes major manufacturing sites dedicated to vehicle production: Fremont Factory and supporting facilities, Gigafactory Nevada Vehicle Operations, Tesla Grand Rapids and Gigafactory Shanghai.
*PwC performed an attest review engagement on this metric. See their report on page 138.

Appendix
Key Metrics

Workplace Safety

ASTM Level One Rate	2019	2020	2021
Tesla		2.6	3.6

Global Total Recordable Injuries per 1,000 Vehicles Produced	2019	2020	2021
Tesla	4.9	3.3	2.9

Days Away from Work, Restricted Time (DART)	2019	2020	2021
Fremont Factory	4.4	3.5	4.4

[1] Includes all major manufacturing sites: Fremont Factory and supporting facilities, Gigafactory Nevada, Gigafactory New York, Tesla Grand Rapids and Gigafactory Shanghai.
[2] Includes major manufacturing sites dedicated to vehicle production: Fremont Factory and supporting facilities, Gigafactory Nevada Vehicle Operations, Tesla Grand Rapids and Gigafactory Shanghai.
[3] Please see page 137 of the appendix for detailed explanation of energy consumption figures.

Appendix

SASB Response

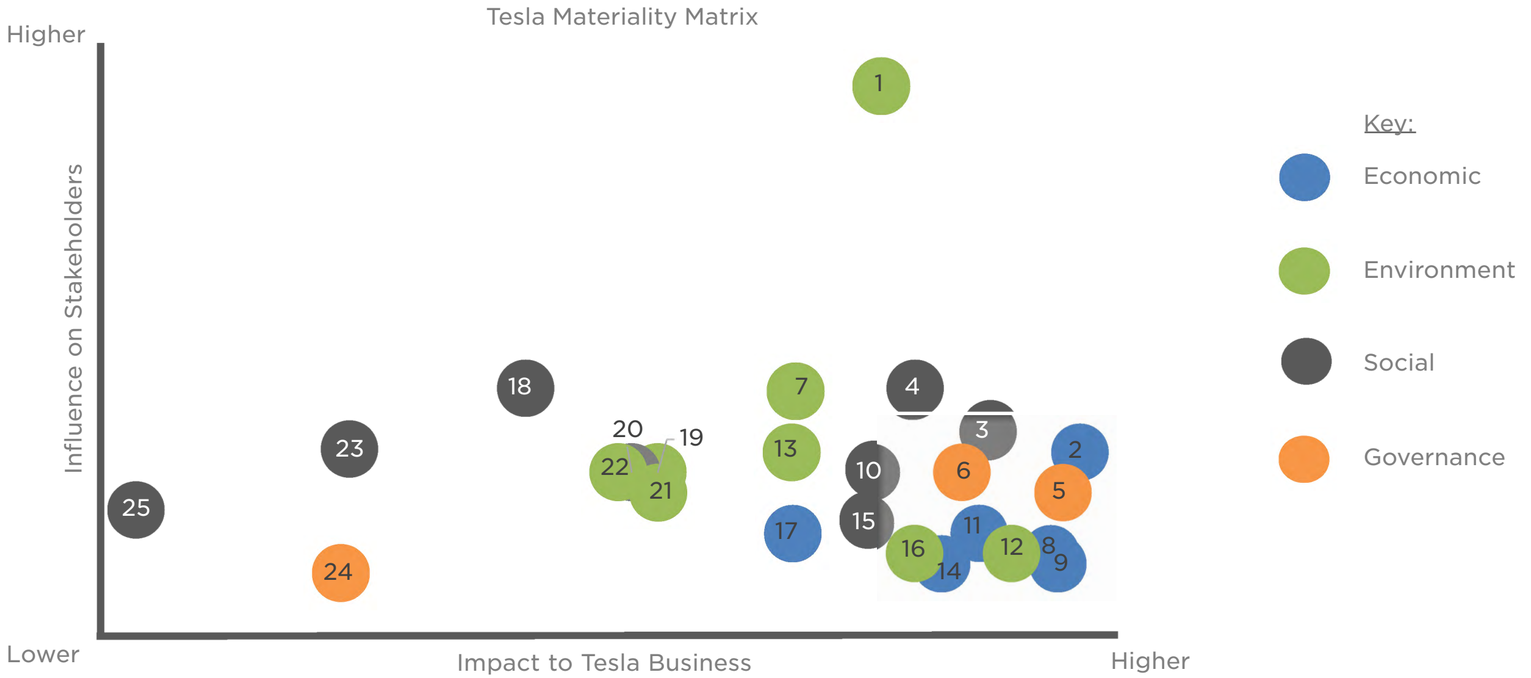
Topic	Accounting Metric	Response
Product Safety	Percentage of models rated by NCAP programs with overall 5-star safety rating, by region	See page 81 – 90 for our discussion of vehicle safety. See page 89 for specifics related to our 5-star safety ratings.
Product Safety	Number of safety-related defect complaints, percentage investigated	Tesla reviews 100 percent of NHTSA VOQ complaints filed for any and all Tesla vehicles produced
Product Safety	Number of vehicles recalled (number conducted with OTA software update*)	Number of U.S. safety recalls in 2021: 11 (1) Number of global safety recalls in 2021: 12 (2) Total units in U.S. affected by these recalls in 2021: 646,862 (11,704) Total units globally affected by recalls in 2021: 1.6m (297,266)
Labor Practices	Percentage of active workforce covered under collective-bargaining agreements	No Tesla employees; employees of some contractors and service providers are covered by CBAs
Labor Practices	(1) Number of work stoppages and (2) total days idle	0 / 0
Fuel Economy & Use-phase Emissions	Sales-weighted average passenger fleet fuel economy, by region	See pages 59 – 63 for discussion / data
Fuel Economy & Use-phase Emissions	Number of (1) zero emission vehicles (ZEV), (2) hybrid vehicles, and (3) plug-in hybrid vehicles sold	Tesla only sells zero emission vehicles. In 2021, we delivered 936,222 vehicles
Fuel Economy & Use-phase Emissions	Discussion of strategy for managing fleet fuel economy and emissions risks and opportunities	See page 63
Materials Sourcing	Description of the management of risks associated with the use of critical materials	See supply chain section, pages 95 - 115
Materials Efficiency & Recycling	Total amount of waste from manufacturing, percentage recycled	See page 72
Materials Efficiency & Recycling	Weight of end-of-life material recovered, percentage recycled	We make the best effort to recycle every battery pack we can. See page 95 - 96 for a discussion on recycling. Tesla is still working to collect end of life data as our vehicles are relatively new in the auto market
Materials Efficiency & Recycling	Average recyclability of vehicles sold	See page 95 – 96 for a discussion on recycling
Number of vehicles manufactured		930,422
Number of vehicles sold		936,222

*OTA designation indicates how many recalls / units were able to be satisfied using over-the-air updates. When a recall is fixed with an OTA update it obviates the need for a visit by the customer to a Tesla Service Center.

Appendix
Our Materiality Analysis

In 2021, we conducted a comprehensive materiality analysis to better understand the key ESG topics that were most salient to our diverse group of stakeholders. To start, we identified over 40 issues in key areas that could directly or indirectly impact our business. The topics ranged from economic, environmental, social and governance issues. These issues were identified from four components: (1) a competitive landscape review, (2) interviews with investors and other key external stakeholders, (3) industry reports and documented research, such as the World Economic Forum's 2021 Global Risks Report and (4) external ESG frameworks relevant to our industry and regulatory requirements across global capital markets.

Tesla's Sustainability Council refined the list of 40 key issues into a survey containing 25 questions in an effort to help us prioritize these topics for operational management and disclosure in this year's Impact Report. As part of the assessment, we surveyed our key stakeholders, asking them to rate the identified economic and ESG topics on a scale of 1-5, based on their perceived importance and impact to Tesla's business. A total of 2,168 individuals from Tesla and approximately 40 external partners, including trade associations, universities, suppliers, environmental consultants, nonprofits and local administrators, responded to the survey. 35% of responses came from North America, 57% from China and 8% from Europe. Below are the top issues identified by our materiality analysis, in order of importance to survey responders.



1. Environmental Management, Reducing Carbon
2. Quality Management– Product Safety
3. Employee Workplace Safety
4. Employee Attraction, Retention, Development
5. Ethical Business Conduct, Integrity, Transparency
6. Data Protection, Cybersecurity
7. Supply Chain Management, Sustainable Materials/Products
8. Customer Satisfaction, Trust and Loyalty
9. Company Brand and Mission
10. Employee Health and Wellness
11. Company's Intellectual Property, Innovation, R&D
12. Renewable Energy
13. Waste Management/Recycling
14. Company Financial Health (Product Sold, Profitability)
15. Employee Compensation and Benefits
16. Air Quality, Reducing Toxic Emissions
17. New Markets, EV, Autonomous Cars
18. Labor Relations
19. Water Management
20. Diversity, Equity and Inclusion
21. Climate Change and Risk Management
22. Biodiversity Preservation, Natural Resource Conservation
23. Human Trafficking, Forced Labor
24. Critical Events, Disaster Relief, Pandemic
25. Community Engagement, Economic Development

Appendix
Supply Chain Policies

The following tables provide summaries of our responsible sourcing policies, the full text of which can be found on our Responsible Sourcing Policies page:

Tesla Human Rights Policy		
Tesla believes the ethical treatment of all people and regard for human rights is core to our mission of a sustainable future and believe all businesses within our supply chain have a responsibility to support our mission and share our respect for human rights. We endorse and base our definition of human rights on the United Nation's Universal Declaration for Human Rights ("UDHR"). The UDHR focuses on dignity, respect, and equality, without discrimination, for all people. We are committed to upholding these rights and values throughout our value chain – including with respect to our employees, customers, shareholders, suppliers, and the communities in which we operate.		
Health and Safety Suppliers are responsible for ensuring that their employees and contractors are provided with a safe and healthy work environment.	Respectful Workplace and Equal Opportunities Tesla recognizes the value of different backgrounds and perspectives in our workforce, and fully promotes equal opportunity for all employees, both current and prospective. Just as we do not discriminate on the basis of race, color, religion, creed, sex, sexual orientation, gender expression or identity, national origin, disability, medical condition, military and veteran status, marital status, pregnancy or any other characteristic protected by law, regulation or ordinance, we require our suppliers to similarly respect the people in their workforces.	Environmental Protection We expect our suppliers to share our goal of recognizing environmental protection as a key principle of a sustainable future.
Child Labor and Young Workers Tesla strictly follows local and national laws restricting the employment of underage workers. Regardless of local laws, no workers at a facility or location that provides materials used in Tesla products may be under the age of 15.	Relationship with Communities Tesla is dedicated to being a responsible member of the communities in which we live and operate. This goes beyond our ability to create jobs and contribute to local value creation. We expect suppliers to also take every effort to continuously improve the positive aspects and reduce any negative impact of their operations on the local community, including with respect to environmental, social, and other quality of life factors.	Indigenous Rights The mining industry on which Tesla relies to source many raw materials that go into our products has historically had an adverse impact on the rights of indigenous peoples and communities in the areas in which they operate. For all raw material extraction and processing used in Tesla products, we expect our mining industry suppliers to engage with legitimate representatives of indigenous communities and include the right to free and informed consent in their operations.

Appendix
Supply Chain Policies

The following tables provide summaries of our responsible sourcing policies, the full text of which can be found on our Responsible Sourcing Policies page:

<table>
<tr><th colspan="3">Tesla Responsible Materials Policy</th></tr>
<tr><td>Suppliers are required to use reasonable efforts to ensure that their parts and products supplied to Tesla do not contribute to armed conflict, human rights abuses, or environmental degradation, regardless of sourcing location. For all materials used in Tesla products, Tesla requires its suppliers to establish policies, due diligence frameworks, and management systems consistent with the OECD Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas or the OECD Guidelines for Multinational Enterprises.</td><td>Materials Explicitly Covered:
• Cassiterite (tin);
• Columbite-tantalite (tantalum);
• Cobalt;
• Gold;
• Lithium;
• Mica;
• Nickel;
• Wolframite (tungsten);
• And any derivatives of the above.</td><td>Tesla requires suppliers to document their efforts to monitor their supply chain for any red flags indicating the use of child or forced labor or contribution to conflict or human rights abuses as well as environmental impacts in the mining or processing of these materials throughout the value chain. Suppliers must implement due diligence programs for the value chains of these materials and are expected to use the RMI's reporting template for the collection of information where such a template is available.</td></tr>
<tr><td colspan="2">For all other materials, Tesla will continuously assess their sourcing for potential risks and red flags, and where any are identified will engage with those suppliers to address any issues and require cooperation with our efforts.</td><td>Suppliers are required to provide information upon request on their sourcing, due diligence efforts and findings for all materials included in the responsible materials policy.</td></tr>
</table>

Appendix
Supply Chain Policies

The following tables provide summaries of our responsible sourcing policies, the full text of which can be found on our Responsible Sourcing Policies page:

Tesla Supplier Code of Conduct	
Labor	Suppliers must commit to uphold the human rights of workers, and to treat them with dignity and respect as understood by the international community. This applies to all workers including temporary, migrant, student, contract, direct employees, and any other type of worker.
Freely Chosen Employment	Forced, bonded (including debt bondage) or indentured labor, involuntary or exploitative prison labor, slavery or trafficking of persons is not permitted. All workers must be provided with a written employment agreement in their native language that contains a description of terms and conditions of employment. All work must be voluntary, and workers shall be free to leave work at any time or terminate their employment without penalty if reasonable notice is given as per worker's contract. Workers shall not be required to pay employers' agents or sub-agents' recruitment fees or other related fees for their employment.
Young Workers	Child labor is not to be used in any stage of manufacturing. The term "child" refers to any person under the greater of (i) the age of 15, (ii) the minimum applicable legal age for completing compulsory education in a country, or (iii) under the minimum legal age for employment in the country. Workers under the age of 18 (Young Workers) shall not perform work that is likely to jeopardize their health or safety, including night shifts and overtime. If child labor is identified, assistance and remediation according to the stricter of international standards or local standards shall be provided.
Working Hours	Working hours are not to exceed the maximum set by local law. Further, a workweek should not be more than 60 hours per week, including overtime, except in emergency or uncommon circumstances. All overtime must be voluntary. Workers shall be allowed at least one day off every seven days, defined as a rest period of at least 24 consecutive hours every seven days. Suppliers must keep employee working hour and pay records in accordance with local and national laws and provide records to Tesla upon request.
Non-Discrimination/Non-Harassment	Suppliers should be committed to a workplace free of harassment and unlawful discrimination. Companies shall not engage in discrimination or harassment based on race, color, age, gender, sexual orientation, gender identity and expression, ethnicity or national origin, disability, pregnancy, religion, political affiliation, union membership, covered veteran status, protected genetic information or marital status in hiring and employment practices such as wages, promotions, rewards, and access to training.
Health and Safety	Suppliers recognize that in addition to minimizing the incidence of work-related injury and illness, a safe and healthy work environment enhances the quality of products and services, consistency of production and worker retention and morale. Suppliers also recognize that ongoing worker input and education are essential to identifying and solving health and safety issues in the workplace
Occupational Safety	Worker potential for exposure to health and safety hazards (chemical, electrical and other energy sources, fire, vehicles, and fall hazards, etc.) are to be identified and assessed, mitigated using the Hierarchy of Controls, which includes eliminating the hazard, substituting processes or materials, controlling through proper design, implementing engineering and administrative controls, preventative maintenance and safe work procedures (including lockout/tagout), and providing ongoing occupational health and safety training.
Emergency Preparedness	Potential emergency situations and events are to be identified and assessed, and their impact minimized by implementing emergency plans and response procedures including emergency reporting, employee notification and evacuation procedures, worker training, and drills. Emergency plans should also include appropriate fire detection and suppression equipment, clear and unobstructed egress, adequate exit facilities, contact information for emergency responders, and recovery plans.
Industrial Hygiene	Worker exposure to chemical, biological, and physical agents is to be identified, evaluated, and controlled according to the Hierarchy of Controls. If any potential hazards were identified, suppliers shall look for opportunities to eliminate and/or reduce the potential hazards. When hazards cannot be adequately controlled by such means, workers are to be provided with and use appropriate, well maintained, personal protective equipment free of charge.
Health and Safety Communication	Suppliers shall provide workers with appropriate workplace health and safety information and training in the language of the worker or in a language the worker can understand for all identified workplace hazards that workers are exposed to, including but not limited to mechanical, electrical, chemical, fire, physical hazards, pathogens, toxins, and other health related risks.

Appendix
Supply Chain Policies

The following tables provide summaries of our responsible sourcing policies, the full text of which can be found on our Responsible Sourcing Policies page:

Tesla Supplier Code of Conduct (continued)	
Environment	Suppliers recognize that environmental responsibility is integral to producing world-class products. Suppliers shall identify the environmental impacts and minimize adverse effects on the community, environment, and natural resources within their manufacturing operations, while safeguarding the health and safety of the public.
Environmental Permits and Reporting	All required environmental permits (e.g. discharge monitoring), approvals, and registrations are to be obtained, maintained, and kept current and their operational and reporting requirements are to be followed.
Pollution Prevention and Resource Reduction	Emissions and discharges of pollutants and generation of waste are to be minimized or eliminated at the source or by practices such as adding pollution control equipment; modifying production, maintenance, and facility processes; or by other means.
Energy Consumption and Greenhouse Gas Emissions	Suppliers are to establish a greenhouse gas ("GHG") data or all products and related services supplied to Tesla upon request. Energy consumption and all relevant Scopes 1 and 2 greenhouse gas emissions (using the GHG protocol) are to be tracked, documented, and publicly reported. Where such tracking is not currently available Suppliers should establish a plan to implement tracking within one-year and provide the data and/or components required to calculate GHG emissions.
Ethics	To meet social responsibilities and to achieve success in the marketplace, Suppliers and their agents are to uphold the highest standards of ethics.
Business Integrity	The highest standards of integrity are to be upheld in all business interactions. Suppliers shall have a zero-tolerance policy to prohibit any and all forms of bribery, corruption, extortion, and embezzlement.
Disclosure of Information	All business dealings should be transparently performed and accurately reflected on the Supplier's business books and records. Information regarding Supplier's labor, health and safety, environmental practices, business activities, structure, financial situation, and performance is to be disclosed in accordance with applicable regulations and prevailing industry practices. Falsification of records or misrepresentation of conditions or practices in the supply chain are unacceptable.
Protection of Identity and Non-Retaliation	Programs that ensure the confidentiality, anonymity, and protection of supplier and employee whistleblowers are to be maintained, unless prohibited by law. Suppliers should have a communicated process for their personnel to be able to raise any concerns without fear of retaliation.
Responsible Sourcing of Minerals	Suppliers shall adopt a policy and exercise due diligence on the source and chain of custody of the cobalt, tantalum, tin, tungsten, and gold in the products they manufacture to reasonably assure that they are sourced in a way consistent with the Organization for Economic Co-operation and Development (OECD) Guidance for Responsible Supply Chains of Minerals from Conflict Affected and High-Risk Areas or an equivalent and recognized due diligence framework.

Appendix
Supply Chain Policies

The following tables provide summaries of our responsible sourcing policies, the full text of which can be found on our Responsible Sourcing Policies page:

Tesla Supplier Code of Conduct (continued)	
Management Systems	Suppliers shall adopt or establish a management system with a scope that is related to the content of the Code of Conduct. The management system shall be designed to ensure: (a) compliance with applicable laws, regulations and customer requirements related to the Supplier's operations and products; (b) conformance with this Code; and (c) identification and mitigation of operational risks related to this Code. It should also facilitate continual improvement.
Company Commitment	Corporate social and environmental responsibility policy statements affirming Supplier's commitment to compliance and continual improvement, endorsed by executive management, and posted in the facility in the local language.
Risk Assessment and Risk Management	A process to identify the legal compliance, environmental, health and safety labor practice and ethics risks associated with Supplier's operations. Determination of the relative significance for each risk and implementation of appropriate procedural and physical controls to control the identified risks and ensure regulatory compliance.
Worker Feedback, Participation and Grievance	Ongoing processes, including an effective grievance mechanism, to assess workers' understanding of and obtain feedback on or violations against practices and conditions covered by this Code and to foster continuous improvement. Workers must be given a safe environment to provide grievance and feedback without fear of reprisal or retaliation. Suppliers must periodically provide workers with information on all grievance procedures. No retaliation against workers for raising workplace concerns may be tolerated, including personal attacks, intimidation, or other threats against workers.
Corrective Action Process	A process for timely correction of deficiencies identified by internal or external assessments, inspections, investigations, and reviews.

Appendix
Stakeholder Engagement

Managing a successful and effective Impact program requires robust engagement with an entire ecosystem of stakeholders – both internal and external to Tesla – including our employees, customers, investors, suppliers, non-profit organizations, educational institutions, governments, the communities in which we operate and trade associations. These groups, among others, all have a stake in the success of our businesses — they are people or organizations who are affected by or can impact our operations. For our business to continue to grow, we need to keep innovating, developing new products and markets all in a sustainable manner. We do this by attracting and retaining the best employees, serving our customers and investors and working with non-profits, our local communities, schools, governments and trade associations to make a positive impact.

Appendix
Tesla's Alignment with the United Nations' Sustainable Development Goals

In 2015, the United Nations defined a blueprint of 17 sustainable development goals to meet the urgent environmental, political and economic challenges facing our world. We understand that companies can play a critical role in providing solutions to these challenges. Our mission to accelerate the world's transition to sustainable energy directly addresses some of these challenges — our products and services have helped to create industry demand for sustainable energy products.

In 2021, as part of our Impact program, we reviewed the issues and topics most material to Tesla (identified on page 126) and key areas of focus for the Company and mapped them to the most relevant Sustainable Development Goals:

United Nations Sustainable Development Goals:	Material Issues and Topics and Other Key Areas of Focus
	- Technological innovation in manufacturing - Development of zero-emission technologies - Reduction of carbon emissions from transport and energy generation - Increase renewable energy generation - Further improve product affordability and accessibility
	- Environmental/climate change management and reporting - Reduce carbon footprint across Scope 1, 2 and 3 emissions
	- Responsible supply chain management and sourcing - Reduce injuries and deaths from traffic accidents - Reduce deaths and illnesses from air, water and soil pollution - Waste reduction and responsible management supply chains - Reduce stress on water systems through efficient use of water in manufacturing
	- Workforce development, education and training - Diversity, Equity and Inclusion - Human capital management and employee development - Community engagement
	- Ethics, corruption and bribery, human rights and labor relations - Human trafficking and responsible supply chain management

Appendix

Metric / Disclosure / Topic	Source(s)	Methodology / Definition
Vehicle use-phase emissions, which represent 80-90% of total automotive emissions (included in Scope 3 of ESG reporting), tend to be misreported due to the use of unrealistic assumptions or not reported at all.	OEM sustainability reports	Analysis of sustainability reports by auto OEMs shows unrealistic assumptions for both vehicle life and annual mileage. For those that disclose their methodology we have found that vehicle life is often estimated to be as low as 10 years and annual distance traveled by vehicles as low as 6,200 miles. This compares to an average life of 17 years in the U.S. (20 years in Europe) and 12,000 annual miles in the U.S. (and 7,450 in Europe). When taken together, even before considering the impacts of using real-world MPG instead of NEDC, WLTP or EPA ratings, this leads to a drastic under-reporting of Scope 3 emissions.
8.4 million metric tons of CO2e savings	Tesla estimate	To estimate CO_2e savings, we first measured the amount of miles driven by our vehicles and kWh of electricity generated and stored by our solar panels and energy storage products at the state, province, and country level for 2021. We then applied an emissions savings factor (in gCO_2e/mi for miles driven and gCO_2e/kWh for electricity generated), for each state, province, and country to estimate CO2e avoided. For miles driven, the emissions savings factor is the net of estimated emissions from our vehicles and an ICE with a real-world fuel efficiency rating of ~24 mpg. The emissions savings factor is based on grid emissions intensity in each respective location and includes upstream emissions from the production and transport of fuels.
Tesla Cumulative Net Energy Impact: 2012–2021 (TWh)	Tesla	Figures based on actual electricity consumption from utility bills for 2018, 2019, 2020 and 2021. 2020 and 2021 figures also include measured consumption for on-site fuel use including propane, diesel and gasoline. Figures for 2012-2017 for electricity, and 2012-2019 for on-site fuel use, are estimated based on actuals scaled for vehicle and battery production for each respective year and facility.
Global Greenhouse Gas (GHG) Emissions by Economic Sector	CAIT data: Climate Watch. 2020. GHG Emissions. Washington, DC: World Resources Institute. Available at: https://www.climatewatchdata.org/ghg-emissions. Land Use Data Source: Food and Agriculture Organization of the United Nations. FAO 2020, FAOSTAT Emissions Database. Latest update: 2020. Accessed: June 2021. https://www.climatewatchdata.org/ghg-emissions.	For simplicity, select categories were combined based on similarity of emissions source. Emissions from Agriculture were combined with emissions from Land-Use Change and Forestry under the label “Agriculture, Land-Use Change and Forestry.” Emissions from Industrial Processes were combined with emissions from Manufacturing/Construction under the label “Industry.” Emissions from Waste, Fugitive Emissions, Other Fuel Combustion and Bunker Fuels (U.S.-only) were combined under the label “Other Energy.”
EEO-1 comparison to industry averages	Publicly available EEO-1 disclosures	Figures for peer benchmarking were sourced from the latest available EEO-1 disclosure on each company’s website. For comparability, all figures were converted to percentages of total workforce. Figures for each Tech and Automotive industry were calculated based on an average of the percentages for the companies in each respective industry. Tables on pages 37 and 38 represent the difference in representation in Tesla’s workforce across each category. Companies in the Tech average: Adobe, Alphabet, Amazon, Apple, Cisco, Meta, HPE, Lyft, Microsoft, Netflix, Nvidia, Oracle, Qualcomm, Salesforce, and Uber Companies in the Automotive average: Ford and General Motors

Appendix

Metric / Disclosure / Topic	Source(s)	Methodology / Definition
Scope 1, 2 and 3 Emissions Definition	Greenhouse Gas Protocol	Scope 1 emissions are direct emissions from owned or controlled sources. Scope 2 emissions (location-based) are indirect emissions from the generation of purchased energy. Scope 3 emissions are all indirect emissions (not included in scope 2) that occur in the value chain of the reporting company, including both upstream and downstream emissions. Emissions from the use of a company's products are included in Scope 3.
6,500 miles At the moment, the manufacturing process of a Model 3 results in slightly higher GHG emissions than an equivalent combustion engine vehicle. However, based on the global weighted average grid mix, a Model 3 has lower lifetime emissions than an equivalent ICE after driving 6,500 miles.	Tesla estimate	Estimate is based on the difference in CO2e emissions from the average of manufacturing phase of a Model 3 and Model Y and an equivalent ICE which is then divided by the net CO2e savings per mile from a Model 3 and Model Y versus an equivalent ICE. Net CO2e savings are based on delivery-weighted global grid mix.
70 tons: Lifetime CO_2 emitted by an average combustion engine vehicle (model year 2021) sold in the U.S. through its use-phase, excluding CO_2 emitted during the oil refining phase.	Tesla estimate based on the EPA 2021 Automotive Trends Report	Figure based on EPA's real-world (5-cycle) testing result of 25.3 MPG across all manufacturers for model year 2021, which equates to 348gCO_2/mi, and 200,000 lifetime miles. Excludes CO_2 emitted during fuel production and transportation. Note: the EPA's real-world testing cycle is not the same as owner-reported MPG sourced from Consumer Reports.

Appendix

Metric / Disclosure / Topic	Source(s)	Methodology / Definition
Manufacturing Phase Emissions for Average Mid-Size Premium ICE	Tesla, Sphera Solutions	In order to estimate the cradle-to-gate carbon footprints (GWP100) of select benchmark vehicles, a simplified approach of multiplying their curb weights by a carbon intensity of ~5.5 kg CO2e/kg was chosen. This reference value is based on a currently produced mid-size premium sedan that is comparable to the Model 3. The accuracy of this estimate for the other ICE vehicles directly depends on how their material compositions compared to that of the reference vehicle as well as on the existing variability of environmental impact profiles across different geographies and suppliers. As such, the specific carbon footprint (GWP100/kg) of the reference vehicle is only a proxy for the average premium mid-size ICE vehicle. Based on past work on automotive LCAs (Rohde-Brandenburger & Koffler, 2019) (Koffler C. 873 , 2013) (Koffler C. , 2010) (Koffler C. , Krinke, Schebek, & Buchgeister, 2008) (Koffler C. , 2007), the uncertainty of these estimates is estimated to be less than ±20% for a cradle-to-gate system boundary, and therefore less than ±5% once the use-phase is added. The reference manufacturer's Environmental Certificates are calculated using the same BOM import functionality of the GaBi DfX software used for the Model 3 in the LCA authored by Sphera as well as GaBi 878 databases for all background data. Benchmark mid-size premium ICE vehicles include BMW 330i 2.0, Audi A4 2.0, Mercedes-Benz C300 2.0, Alfa Romeo Giulia 2.0, Volvo S60 2.0, Cadillac ATS 2.0, Lexus IS 300 2.0 and Infiniti Q50 2.0. Benchmark cross-over SUV premium ICE vehicles include BMW X3, Audi Q5, Mercedes GLC, Jaguar F-Pace, AR Stelvio, Volvo XC60, Cadillac XT5, Lexus NX and Porsche Macan.
Use-phase Emissions for Average Mid-Size Premium ICE	Consumer Reports	Figured based on owner-reported fuel economy from Consumer Reports for the latest available model year (2018-2020, depending on the make/model). 24.8 MPG is representative of the average of Alfa Romeo Giulia , Audi A4, BMW 330i, Cadillac ATS, Infiniti Q50, Lexus IS 300, Mercedes-Benz C300, and Volvo S60. use-phase GWP100 of ~400 gCO2e/mi includes gasoline production and distribution emissions from GaBi 2019 databases as well as consideration of bio-fuel mix of gasoline in the U.S. (~12%).
Manufacturing Phase Emissions for Model 3 and Model Y	Tesla	Figure inclusive of: raw and semi-finished material production including transportation, mechanical processing and shaping, battery manufacturing, vehicle assembly and paint shop, all fuels and energy (natural gas, electricity, etc.), other auxiliaries (lubricants, water, etc.) and end-of-life disposal. Figure exclusive of: capital goods (e.g., machinery, buildings), infrastructure (e.g., roads, power transmission systems), employee commute, external charging equipment and infrastructure, maintenance and service during use, packaging, transport to recycler, disposal of manufacturing waste, inbound transportation from Tier 1 suppliers, distribution to customers. Excluded activities are estimated to represent minor contributions to the cradle-to-gate as well as the overall LCA results. Where solar and storage are assumed to be a fuel source for the use-phase of the Model 3Y, emissions were included in the manufacturing phase figure. The Model 3Y Rideshare Use (solar charged) scenario is allocated 100% of these emissions on a per mile basis, while the Model 3Y Personal Use (solar charged) scenario is allocated 82% of these emissions and 18% grid-charged emissions on a per mile basis (based on observed supercharging vs. other split).
Use-phase Emissions for Model 3 and Model Y	Tesla; U.S. Department of Energy; IEA; China Electricity Council	Use-phase emissions for grid charging are based on Model 3 and Model Y delivery-weighted state, province and country level grid mix based on grid carbon intensity data. U.S. Source: U.S. Department of Energy | E.U. + EFTA Source: IEA | China Source: China Electricity Council's China Power Industry Annual Report 2021 Use-phase emissions calculated using the geographic distribution of the Model 3 and Model Y in each respective region based on Tesla's delivery data, which weights state, province and country level carbon intensity figures and assumes no change in grid mix into the future. This is a conservative assumption based on recent new electricity generation capacity trends and commitments made by states and countries to increase renewable mix on their respective grids. Grid emission intensities include upstream emissions from the production and transport of fuels. Real-world observed efficiency of Model 3 and Model Y over ~30 billion miles, inclusive of energy losses from grid to battery, utilized for use-phase emissions calculations (converting gCO_2e/kWh to gCO_2e/mi).

Appendix

Metric / Disclosure / Topic	Source(s)	Methodology / Definition
Vehicle useful life	U.S. Department of Transportation, European Automobile Manufacturers Association, International Organization of Motor Vehicle Manufacturers, Association Auxiliaire De L'Automobile	To calculate scrappage age of vehicles in a region, sum up annual vehicle sales from the most current year going back until the sum equals the current vehicle parc size. In order to be conservative, and normalize our figure based on recent vehicle sales trends in each region, we divided total vehicle parc by average vehicles sales in the respective regions for 2019 and 2020 (latest available data). This resulted in a scrappage age of 17 years and 200,000 miles in the U.S. and 20 years and 150,000 miles for Europe. For simplicity, China assumed to have similar useful life to Europe of approximately 20 years and 150,000 miles.
Energy Efficiency EPA range in miles/kWh	OEM data	Figures based on estimated EPA range and usable battery capacity disclosures by OEMs for each model.
Combination Trucks % of U.S. Fleet and U.S. Vehicle Emissions	U.S. EPA, U.S. Department of Transportation	% of U.S. Vehicle Fleet chart figures calculated using vehicle parc figures from U.S. Department of Transportation. % of U.S. Vehicle Emissions chart figures estimated using vehicle parc, fuel economy and VMT data from U.S. Department of Transportation. Calculation assumes fuel emissions factor for combination trucks are the same as the rest of the vehicle parc and are therefore conservative. Combination trucks use diesel fuel which, according to the U.S. EPA, has a higher GHG content versus gasoline used for light duty cars and trucks.
Water Consumption per Vehicle	Tesla, OEM Sustainability Reports	OEM data sourced from respective websites and latest available ESG reports. Tesla 2021 figure includes all our major manufacturing facilities dedicated to vehicle production.. It excludes Gigafactory New York, which produces solar and energy products.
Total Cost of Ownership	Tesla, Edmonds, OEM websites, CarEdge	Figures reflective of model year 2021 estimates from various sources. Depreciation based on latest MSRP. Model 3 RWD figures based on data from the Tesla fleet.

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Report of Independent Accountants

To the Board of Directors of Tesla, Inc.

We have reviewed the accompanying Tesla, Inc. (Tesla) management assertion that the greenhouse gas (GHG) emissions metrics for the year ended December 31, 2021 in management's assertion are presented in accordance with the assessment criteria set forth in management's assertion. Tesla's management is responsible for its assertion and for the selection of the criteria, which management believes provide an objective basis for measuring and reporting on the GHG emissions metrics. Our responsibility is to express a conclusion on management's assertion based on our review.

Our review was conducted in accordance with attestation standards established by the American Institute of Certified Public Accountants (AICPA) in AT-C section 105, *Concepts Common to All Attestation Engagements,* and AT-C section 210, *Review Engagements*. Those standards require that we plan and perform the review to obtain limited assurance about whether any material modifications should be made to management's assertion in order for it to be fairly stated. The procedures performed in a review vary in nature and timing from, and are substantially less in extent than, an examination, the objective of which is to obtain reasonable assurance about whether management's assertion is fairly stated, in all material respects, in order to express an opinion. Accordingly, we do not express such an opinion. Because of the limited nature of the engagement, the level of assurance obtained in a review is substantially lower than the assurance that would have been obtained had an examination been performed. We believe that the review evidence obtained is sufficient and appropriate to provide a reasonable basis for our conclusion.

We are required to be independent and to meet our other ethical responsibilities in accordance with relevant ethical requirements related to the engagement.

Our firm applies the Statements on Quality Control Standards established by the AICPA and, accordingly, maintains a comprehensive system of quality control.

The procedures we performed were based on our professional judgment. In performing our review, we performed inquiries, performed tests of mathematical accuracy of computations on a sample basis, read relevant policies to understand terms related to relevant information about the GHG emissions metrics, reviewed supporting documentation in regard to the completeness and accuracy of the data in the GHG emissions metrics on a sample basis, and performed analytical procedures.

GHG emissions quantification is subject to significant inherent measurement uncertainty because of such things as GHG emissions factors that are used in mathematical models to calculate GHG emissions, and the inability of these models, due to incomplete scientific knowledge and other factors, to accurately measure under all circumstances the relationship between various inputs and the resultant GHG emissions. Environmental and energy use data used in GHG emissions calculations are subject to inherent limitations, given the nature and the methods used for measuring such data. The selection by management of different but acceptable measurement techniques could have resulted in materially different amounts or metrics being reported.

As discussed in management's assertion, Tesla has estimated GHG emissions for certain emissions sources for which no primary usage data is available.

Based on our review, we are not aware of any material modifications that should be made to Tesla's management assertion in order for it to be fairly stated.

San Jose, California
May 5, 2022

Management Assertion
Scope 1 & 2 GHG Emissions

Overview

With respect to the greenhouse gas (GHG) emissions metrics for the year ended December 31, 2021 presented in table 2 below, which are also included in this Tesla Impact Report 2021 as identified by the "*" symbol, management of Tesla, Inc. (Tesla) asserts that the GHG emissions metrics are presented in accordance with the assessment criteria set forth below.

Management is responsible for the selection of the criteria, which management believes provide an objective basis for measuring and reporting on the GHG emissions metrics, and for the completeness, accuracy, and validity of the GHG emissions metrics. Tesla's GHG emissions are rounded to the nearest thousand.

Organizational Boundary

Tesla uses the operational control approach to account for and report its Scope 1 and Scope 2 GHG emissions. This includes sites engaged in manufacturing; sales, service, and delivery; and other activities described below. Data for acquired sites are included once the site has been operating for at least a year at the beginning of the reporting period.

Table 1: Description of Tesla Sites

Site Type	Site Activities
Manufacturing	Manufacture Tesla products, including vehicles, superchargers, solar tiles, and energy storage products. Support manufacturing through the design and manufacture of equipment and tools used at manufacturing sites or by storing manufacturing materials, parts, or finished products.
Sales, Service, and Delivery (SSD)	Sell products, provide vehicle service, store parts for vehicle service, and deliver vehicles.
Other	Conduct research & development, administration, energy product warehousing and deployment, and other mixed-use warehousing.

Table 2: Metrics – GHG Emissions

GHG Emissions and Assessment Criteria[1,2,3]	Quantity
Scope 1 GHG Emissions[4] Direct GHG emissions occurring from stationary combustion, mobile combustion, and process emissions.	185,000 Metric Tons CO_2e
Scope 2 GHG Emissions (location-based)[5] Indirect GHG emissions from the generation of electricity purchased by Tesla for site operations.	403,000 Metric Tons CO_2e

GHG Emissions Disclosure

1. Tesla considers the principles and guidance of the World Resources Institute (WRI) and the World Business Council for Sustainable Development's (WBCSD) Greenhouse Gas Protocol Initiative's A Corporate Accounting and Reporting Standard, Revised Edition, and GHG Protocol Scope 2 Guidance, An amendment to the GHG Protocol Corporate Standard (together the "GHG Protocol") to guide the criteria to assess, calculate and report direct and indirect GHG emissions.

2. GHG emissions quantification is subject to significant inherent measurement uncertainty because of such things as GHG emissions factors that are used in mathematical models to calculate GHG emissions, and the inability of these models, due to incomplete scientific knowledge and other factors, to accurately measure under all circumstances the relationship between various inputs and the resultant GHG emissions. Environmental and energy use data used in GHG emissions calculations are subject to inherent limitations, given the nature and the methods used for measuring such data. The selection by management of different but acceptable measurement techniques could have resulted in materially different amounts or metrics being reported.

Management Assertion
Scope 1 & 2 GHG Emissions

GHG Emissions Disclosure (cont.)

3. Carbon dioxide equivalent (CO_2e) emissions are inclusive of carbon dioxide (CO_2), nitrous oxide (N_2O), methane (CH_4), and industrial gases such as hydrofluorocarbons (HFCs), and sulfur hexafluoride (SF_6). Perfluorocarbons (PFCs) and nitrogen trifluoride (NF_3) are not emitted by Tesla's sites. These carbon dioxide equivalent emissions utilize Global Warming Potentials (GWPs) defined by the Intergovernmental Panel on Climate Change's (IPCC) Fifth Assessment Report (AR5 – 100 year) unless a different Assessment Report is already embedded in the emission factor source. Carbon dioxide equivalent emissions are calculated by multiplying actual or estimated energy and fuel usage by the relevant emission factor taking into account the equivalent GWP. All emission factors are updated annually where applicable.

Management Assertion
Scope 1 & 2 GHG Emissions

GHG Emissions Disclosure (cont.)

4. Related to Scope 1 GHG emissions:

- Stationary combustion (natural gas):
  - Combustion from stationary equipment and machinery at all Tesla sites.
  - Global natural gas usage data was collected from monthly utility invoices obtained from third-party providers.
  - If monthly usage data was not available, Tesla estimated the natural gas usage by determining an annual natural gas usage rate per square foot based on actual 2021 monthly natural gas usage data for sites in a similar geographic location and type of site. This rate was then multiplied by the square footage of the site building space.
  - Emission factors: United States (U.S.) Environmental Protection Agency (EPA) Emission Factors for Greenhouse Gas Inventories 2022.

- Stationary and mobile combustion (propane, diesel, and gasoline):
  - Combustion from emergency and portable generators, powered industrial vehicles (e.g., forklifts), temporary space heaters, and other portable equipment (e.g., landscaping equipment) at manufacturing sites.
  - Propane, diesel, and gasoline usage data was collected from invoices and fuel reports obtained from third-party providers.
  - Emission factors: U.S. EPA Emission Factors for Greenhouse Gas Inventories 2022.
- Fleet mobile combustion (diesel and gasoline):
  - Combustion from the operation of Tesla's on-road and non-road vehicles (i.e., Tesla's global fleet).
  - Diesel and gasoline usage (volume) from Tesla's global fleet was collected from fuel cards issued by Tesla's fleet management partner. Vehicle miles driven by Tesla on-road vehicles was collected from odometer readings and driver logs.
  - Tesla classified vehicles in its global fleet by type: diesel medium and heavy-duty vehicles, diesel light-duty trucks, gasoline passenger cars, gasoline light-duty trucks, gasoline heavy-duty vehicles, and non-road industrial/commercial equipment. Temporary fleet additions for operational use were categorized as 'other', for which only CO_2 emissions are calculated, because Tesla does not have detailed information on what type of vehicles were rented and miles driven.
  - CO_2 emissions were calculated by multiplying the relevant emission factor by the volume of diesel and gasoline used by Tesla's on-road and non-road vehicles for the year ended December 31, 2021.
  - CH_4 and N_2O emissions were calculated by multiplying the relevant emission factor (depending on vehicle type and age) by the miles driven by Tesla's on-road vehicles, and by the volume of diesel and gasoline used by Tesla's non-road vehicles, for the year ended December 31, 2021.
  - Emission factors: U.S. EPA Emission Factors for Greenhouse Gas Inventories 2022.
- Process emissions (Gigafactory Nevada lithium-ion battery cell recycling plant):
  - Emissions from processing manufacturing scrap lithium-ion cells at the Gigafactory Nevada cell recycling plant.
  - The quantity of manufacturing scrap processed was collected from Tesla's cell recycling plant operations team. The concentration of CO_2 and CH_4 in emissions (emission rates) were measured during two emissions source tests. GHG emissions were calculated by multiplying the quantity of manufacturing scrap processed, as recorded by the recycling plant operations team, by the CO_2 and CH_4 emission rates developed based on emissions source tests.
- Estimated emissions from the sources above account for approximately 10% of Scope 1 GHG emissions.
- Excluded Scope 1 GHG emissions: Tesla excluded the following sources of GHG emissions which are estimated to represent less than 5 percent of Tesla's reported Scope 1 GHG emissions:
  - GHG emissions resulting from propane, diesel, and gasoline combustion at Tesla sites not engaged in manufacturing.
  - GHG emissions from refrigerant loss to the atmosphere.
  - GHG emissions from emergency stabilization of damaged and potentially damaged lithium-ion cells.
  - GHG emissions resulting from the chemical reaction of two-part polyurethane adhesives

Management Assertion
Scope 1 & 2 GHG Emissions

GHG Emissions Disclosure (cont.)

5. Related to Scope 2 GHG emissions (location-based):

- GHG emissions from the generation of electricity purchased by Tesla for site operations. For sites that include Superchargers (electric vehicle fast charging stations), Tesla did not include electricity procured for customer use through the Supercharger stations as those emissions are included in Scope 3, Category 11 Use of Sold Products.
- Global electricity usage data was collected from monthly utility invoices obtained from third-party providers.
- The WRI and WBSCD issued additional guidance for Scope 2 emissions in 2015 (in GHG Protocol Scope 2 Guidance, An amendment to the GHG Protocol Corporate Standard), which sets forth reporting under both location-based and market-based methodologies, where the prior version of the GHG Protocol only addressed a location-based methodology. The location-based method applies average emission factors that correspond to the grid where the consumption occurs, whereas the market-based method applies emission factors that correspond to energy purchased through contractual instruments. Where contractual instruments were not purchased, the market-based emission factors represent either the residual mix, where available, or the location grid-average factors. This management assertion only includes Tesla's location-based Scope 2 GHG emissions as Tesla is continuing to implement its processes to measure and report its market-based Scope 2 GHG emissions.
- Emission factors:
  - Canada: Environment Canada. 2019 National inventory report: greenhouse gas sources and sinks in Canada.
  - United Kingdom (UK): UK database published by the Department for Environment Food & Rural Affairs (DEFRA) 2022.
  - U.S. EPA Emission Factors for Greenhouse Gas Inventories 2022.
  - All other countries: International Energy Agency (IEA) Emissions Factors 2021.
- Estimated emissions from the source above account for approximately 5% of Scope 2 GHG emissions.
- Excluded Scope 2 GHG Emissions: Tesla excluded the following sources of GHG emissions which are estimated to represent less than 5 percent of Tesla's reported Scope 2 GHG emissions:
  - District heating and cooling.

Appendix

Except as otherwise noted, this report covers Tesla, Inc.'s fiscal year 2021, and references to "to date," "currently," or similar expressions reflect information as of December 31, 2021. Our data and methodologies have been collected and reviewed internally using relevant scientific and technical methodologies. Our statements about past occurrences and potential future development are based on data, estimates and assumptions made as of the date of publication. Certain information and data in this report may come from third-party sources and operations outside of our control. Tesla's ESG Sustainability Council actively reviews and updates our methodologies for calculating the metrics set forth in this report. From time to time, data reported for prior periods may change due to improvement in data collection and measurement, new data availability, methodological adjustments or activities related to mergers and acquisitions, and we reserve the right to revisit our prior historical data and estimates to ensure accuracy and make any necessary corrections to our public reporting. Tesla holds no obligation to update any information or statements in this report.

Forward-Looking Statements

Certain statements in this report, including statements relating to future product development, performance and capability, timelines for the building of new factories and opening of new locations, expected cost savings from local manufacturing and materials recycling operations, the expansion of our Supercharger Network, future environmental sustainability efforts and expected efficiencies, data collection and reporting of results in subsequent Impact Reports are forward-looking statements that are subject to risks and uncertainties. These forward-looking statements are based on management's current expectations. Various important factors could cause actual results to differ materially, including the risks identified in our U.S. Securities and Exchange Commission ("SEC") filings and reports, including the risks identified under the section captioned "Risk Factors" in our quarterly report on Form 10-Q filed with the SEC on July 27, 2021 . Tesla disclaims any obligation to update any forward-looking statement contained in this report.

ATTACHMENT 5

City of South Pasadena General Plan

Due to file size, the full South Pasadena General Plan can be viewed here: https://www.southpasadenaca.gov/government/departments/planning-and-building/general-plan-current

ATTACHMENT 6

Enterprise Lease Management
Master Equity Lease Agreement

MASTER EQUITY LEASE AGREEMENT

This Master Equity Lease Agreement is entered into this _____ day of _____, by and between Enterprise FM Trust, a Delaware statutory trust ("Lessor"), and the lessee whose name and address is set forth on the signature page below ("Lessee").

1. LEASE OF VEHICLES: Lessor hereby leases to Lessee and Lessee hereby leases from Lessor the vehicles (individually, a "Vehicle" and collectively, the "Vehicles") described in the schedules from time to time delivered by Lessor to Lessee as set forth below ("Schedule(s)") for the rentals and on the terms set forth in this Agreement and in the applicable Schedule. References to this "Agreement" shall include this Master Equity Lease Agreement and the various Schedules and addenda to this Master Equity Lease Agreement. Lessor will, on or about the date of delivery of each Vehicle to Lessee, send Lessee a Schedule covering the Vehicle, which will include, among other things, a description of the Vehicle, the lease term and the monthly rental and other payments due with respect to the Vehicle. The terms contained in each such Schedule will be binding on Lessee unless Lessee objects in writing to such Schedule within ten (10) days after the date of delivery of the Vehicle covered by such Schedule. Lessor is the sole legal owner of each Vehicle. This Agreement is a lease only and Lessee will have no right, title or interest in or to the Vehicles except for the use of the Vehicles as described in this Agreement. This Agreement shall be treated as a true lease for federal and applicable state income tax purposes with Lessor having all benefits of ownership of the Vehicles. It is understood and agreed that Enterprise Fleet Management, Inc. or an affiliate thereof (together with any subservicer, agent, successor or assign as servicer on behalf of Lessor, "Servicer") may administer this Agreement on behalf of Lessor and may perform the service functions herein provided to be performed by Lessor.

2. TERM: The term of this Agreement ("Term") for each Vehicle begins on the date such Vehicle is delivered to Lessee (the "Delivery Date") and, unless terminated earlier in accordance with the terms of this Agreement, continues for the "Lease Term" as described in the applicable Schedule.

3. RENT AND OTHER CHARGES:

(a) Lessee agrees to pay Lessor monthly rental and other payments according to the Schedules and this Agreement. The monthly payments will be in the amount listed as the "Total Monthly Rental Including Additional Services" on the applicable Schedule (with any portion of such amount identified as a charge for maintenance services under Section 4 of the applicable Schedule being payable to Lessor as agent for Enterprise Fleet Management, Inc.) and will be due and payable in advance on the first day of each month. If a Vehicle is delivered to Lessee on any day other than the first day of a month, monthly rental payments will begin on the first day of the next month. In addition to the monthly rental payments, Lessee agrees to pay Lessor a pro-rated rental charge for the number of days that the Delivery Date precedes the first monthly rental payment date. A portion of each monthly rental payment, being the amount designated as "Depreciation Reserve" on the applicable Schedule, will be considered as a reserve for depreciation and will be credited against the Delivered Price of the Vehicle for purposes of computing the Book Value of the Vehicle under Section 3(c). Lessee agrees to pay Lessor the "Total Initial Charges" set forth in each Schedule on the due date of the first monthly rental payment under such Schedule. Lessee agrees to pay Lessor the "Service Charge Due at Lease Termination" set forth in each Schedule at the end of the applicable Term (whether by reason of expiration, early termination or otherwise).

(b) In the event the Term for any Vehicle ends prior to the last day of the scheduled Term, whether as a result of a default by Lessee, a Casualty Occurrence or any other reason, the rentals and management fees paid by Lessee will be recalculated in accordance with the rule of 78's and the adjusted amount will be payable by Lessee to Lessor on the termination date.

(c) Lessee agrees to pay Lessor within thirty (30) days after the end of the Term for each Vehicle, additional rent equal to the excess, if any, of the Book Value of such Vehicle over the greater of (i) the wholesale value of such Vehicle as determined by Lessor in good faith or (ii) except as provided below, twenty percent (20%) of the Delivered Price of such Vehicle as set forth in the applicable Schedule. If the Book Value of such Vehicle is less than the greater of (i) the wholesale value of such Vehicle as determined by Lessor in good faith or (ii) except as provided below, twenty percent (20%) of the Delivered Price of such Vehicle as set forth in the applicable Schedule, Lessor agrees to pay such deficiency to Lessee as a terminal rental adjustment within thirty (30) days after the end of the applicable Term. Notwithstanding the foregoing, if (i) the Term for a Vehicle is greater than forty-eight (48) months (including any extension of the Term for such Vehicle), (ii) the mileage on a Vehicle at the end of the Term is greater than 15,000 miles per year on average (prorated on a daily basis) (i.e., if the mileage on a Vehicle with a Term of thirty-six (36) months is greater than 45,000 miles) or (iii) in the sole judgment of Lessor, a Vehicle has been subject to damage or any abnormal or excessive wear and tear, the calculations described in the two immediately preceding sentences shall be made without giving effect to clause (ii) in each such sentence. The "Book Value" of a Vehicle means the sum of (i) the "Delivered Price" of the Vehicle as set forth in the applicable Schedule minus (ii) the total Depreciation Reserve paid by Lessee to Lessor with respect to such Vehicle plus (iii) all accrued and unpaid rent and/or other amounts owed by Lessee with respect to such Vehicle.

(d) Any security deposit of Lessee will be returned to Lessee at the end of the applicable Term, except that the deposit will first be applied to any losses and/or damages suffered by Lessor as a result of Lessee's breach of or default under this Agreement and/or to any other amounts then owed by Lessee to Lessor.

(e) Any rental payment or other amount owed by Lessee to Lessor which is not paid within twenty (20) days after its due date will accrue interest, payable on demand of Lessor, from the date due until paid in full at a rate per annum equal to the lesser of (i) Eighteen Percent (18%) per annum or (ii) the highest rate permitted by applicable law (the "Default Rate").

(f) If Lessee fails to pay any amount due under this Agreement or to comply with any of the covenants contained in this Agreement, Lessor, Servicer or any other agent of Lessor may, at its option, pay such amounts or perform such covenants and all sums paid or incurred by Lessor in connection therewith will be repayable by Lessee to Lessor upon demand together with interest thereon at the Default Rate.

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(g) Lessee's obligations to make all payments of rent and other amounts under this Agreement are absolute and unconditional and such payments shall be made in immediately available funds without setoff, counterclaim or deduction of any kind. Lessee acknowledges and agrees that neither any Casualty Occurrence to any Vehicle nor any defect, unfitness or lack of governmental approval in, of, or with respect to, any Vehicle regardless of the cause or consequence nor any breach by Enterprise Fleet Management, Inc. of any maintenance agreement between Enterprise Fleet Management, Inc. and Lessee covering any Vehicle regardless of the cause or consequence will relieve Lessee from the performance of any of its obligations under this Agreement, including, without limitation, the payment of rent and other amounts under this Agreement.

4. USE AND SURRENDER OF VEHICLES: Lessee agrees to allow only duly authorized, licensed and insured drivers to use and operate the Vehicles. Lessee agrees to comply with, and cause its drivers to comply with, all laws, statutes, rules, regulations and ordinances and the provisions of all insurance policies affecting or covering the Vehicles or their use or operation. Lessee agrees to keep the Vehicles free of all liens, charges and encumbrances. Lessee agrees that in no event will any Vehicle be used or operated for transporting hazardous substances or persons for hire, for any illegal purpose or to pull trailers that exceed the manufacturer's trailer towing recommendations. Lessee agrees that no Vehicle is intended to be or will be utilized as a "school bus" as defined in the Code of Federal Regulations or any applicable state or municipal statute or regulation. Lessee agrees not to remove any Vehicle from the continental United States without first obtaining Lessor's written consent. At the expiration or earlier termination of this Agreement with respect to each Vehicle, or upon demand by Lessor made pursuant to Section 14, Lessee at its risk and expense agrees to return such Vehicle to Lessor at such place and by such reasonable means as may be designated by Lessor. If for any reason Lessee fails to return any Vehicle to Lessor as and when required in accordance with this Section, Lessee agrees to pay Lessor additional rent for such Vehicle at twice the normal pro-rated daily rent. Acceptance of such additional rent by Lessor will in no way limit Lessor's remedies with respect to Lessee's failure to return any Vehicle as required hereunder.

5. COSTS, EXPENSES, FEES AND CHARGES: Lessee agrees to pay all costs, expenses, fees, charges, fines, tickets, penalties and taxes (other than federal and state income taxes on the income of Lessor) incurred in connection with the titling, registration, delivery, purchase, sale, rental, use or operation of the Vehicles during the Term. If Lessor, Servicer or any other agent of Lessor incurs any such costs or expenses, Lessee agrees to promptly reimburse Lessor for the same.

6. LICENSE AND CHARGES: Each Vehicle will be titled and licensed in the name designated by Lessor at Lessee's expense. Certain other charges relating to the acquisition of each Vehicle and paid or satisfied by Lessor have been capitalized in determining the monthly rental, treated as an initial charge or otherwise charged to Lessee. Such charges have been determined without reduction for trade-in, exchange allowance or other credit attributable to any Lessor-owned vehicle.

7. REGISTRATION PLATES, ETC.: Lessee agrees, at its expense, to obtain in the name designated by Lessor all registration plates and other plates, permits, inspections and/or licenses required in connection with the Vehicles, except for the initial registration plates which Lessor will obtain at Lessee's expense. The parties agree to cooperate and to furnish any and all information or documentation, which may be reasonably necessary for compliance with the provisions of this Section or any federal, state or local law, rule, regulation or ordinance. Lessee agrees that it will not permit any Vehicle to be located in a state other than the state in which such Vehicle is then titled for any continuous period of time that would require such Vehicle to become subject to the titling and/or registration laws of such other state.

8. MAINTENANCE OF AND IMPROVEMENTS TO VEHICLES:

(a) Lessee agrees, at its expense, to (i) maintain the Vehicles in good condition, repair, maintenance and running order and in accordance with all manufacturer's instructions and warranty requirements and all legal requirements and (ii) furnish all labor, materials, parts and other essentials required for the proper operation and maintenance of the Vehicles. Any alterations, additions, replacement parts or improvements to a Vehicle will become and remain the property of Lessor and will be returned with such Vehicle upon such Vehicle's return pursuant to Section 4. Notwithstanding the foregoing, so long as no Event of Default has occurred and is continuing, Lessee shall have the right to remove any additional equipment installed by Lessee on a Vehicle prior to returning such Vehicle to Lessor under Section 4. The value of such alterations, additions, replacement parts and improvements will in no instance be regarded as rent. Without the prior written consent of Lessor, Lessee will not make any alterations, additions, replacement parts or improvements to any Vehicle which detract from its economic value or functional utility. Lessor will not be required to make any repairs or replacements of any nature or description with respect to any Vehicle, to maintain or repair any Vehicle or to make any expenditure whatsoever in connection with any Vehicle or this Agreement.

(b) Lessor and Lessee acknowledge and agree that if Section 4 of a Schedule includes a charge for maintenance, (i) the Vehicle(s) covered by such Schedule are subject to a separate maintenance agreement between Enterprise Fleet Management, Inc. and Lessee and (ii) Lessor shall have no liability or responsibility for any failure of Enterprise Fleet Management, Inc. to perform any of its obligations thereunder or to pay or reimburse Lessee for its payment of any costs and expenses incurred in connection with the maintenance or repair of any such Vehicle(s).

9. SELECTION OF VEHICLES AND DISCLAIMER OF WARRANTIES:

(a) LESSEE ACCEPTANCE OF DELIVERY AND USE OF EACH VEHICLE WILL CONCLUSIVELY ESTABLISH THAT SUCH VEHICLE IS OF A SIZE, DESIGN, CAPACITY, TYPE AND MANUFACTURE SELECTED BY LESSEE AND THAT SUCH VEHICLE IS IN GOOD CONDITION AND REPAIR AND IS SATISFACTORY IN ALL RESPECTS AND IS SUITABLE FOR LESSEE'S PURPOSE. LESSEE ACKNOWLEDGES THAT LESSOR IS NOT A MANUFACTURER OF ANY VEHICLE OR AN AGENT OF A MANUFACTURER OF ANY VEHICLE.

(b) LESSOR MAKES NO REPRESENTATION OR WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, WITH RESPECT TO ANY VEHICLE, INCLUDING, WITHOUT LIMITATION, ANY REPRESENTATION OR WARRANTY AS TO CONDITION, MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE, IT BEING AGREED THAT ALL SUCH RISKS ARE TO BE BORNE BY LESSEE. THE VEHICLES ARE LEASED "AS IS," "WITH ALL FAULTS." All warranties made by any supplier, vendor and/or manufacturer of a Vehicle are hereby assigned by Lessor to Lessee for the applicable Term and Lessee's only remedy, if any, is against the supplier, vendor or manufacturer of the Vehicle.

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(c) None of Lessor, Servicer or any other agent of Lessor will be liable to Lessee for any liability, claim, loss, damage (direct, incidental or consequential) or expense of any kind or nature, caused directly or indirectly, by any Vehicle or any inadequacy of any Vehicle for any purpose or any defect (latent or patent) in any Vehicle or the use or maintenance of any Vehicle or any repair, servicing or adjustment of or to any Vehicle, or any delay in providing or failure to provide any Vehicle, or any interruption or loss of service or use of any Vehicle, or any loss of business or any damage whatsoever and however caused. In addition, none of Lessor, Servicer or any other agent of Lessor will have any liability to Lessee under this Agreement or under any order authorization form executed by Lessee if Lessor is unable to locate or purchase a Vehicle ordered by Lessee or for any delay in delivery of any Vehicle ordered by Lessee.

10. RISK OF LOSS: Lessee assumes and agrees to bear the entire risk of loss of, theft of, damage to or destruction of any Vehicle from any cause whatsoever ("Casualty Occurrence"). In the event of a Casualty Occurrence to a Vehicle, Lessee shall give Lessor prompt notice of the Casualty Occurrence and thereafter will place the applicable Vehicle in good repair, condition and working order; provided, however, that if the applicable Vehicle is determined by Lessor to be lost, stolen, destroyed or damaged beyond repair (a "Totaled Vehicle"), Lessee agrees to pay Lessor no later than the date thirty (30) days after the date of the Casualty Occurrence the amounts owed under Sections 3(b) and 3(c) with respect to such Totaled Vehicle. Upon such payment, this Agreement will terminate with respect to such Totaled Vehicle.

11. INSURANCE:

(a) Lessee agrees to purchase and maintain in force during the Term, insurance policies in at least the amounts listed below covering each Vehicle, to be written by an insurance company or companies satisfactory to Lessor, insuring Lessee, Lessor and any other person or entity designated by Lessor against any damage, claim, suit, action or liability:

(i) Commercial Automobile Liability Insurance (including Uninsured/Underinsured Motorist Coverage and No-Fault Protection where required by law) for the limits listed below (Note - $2,000,000 Combined Single Limit Bodily Injury and Property Damage with No Deductible is required for each Vehicle capable of transporting more than 8 passengers):

State of Vehicle Registration	Coverage
Connecticut, Massachusetts, Maine, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, and Vermont	$1,000,000 Combined Single Limit Bodily Injury and Property Damage - No Deductible
Florida	$500,000 Combined Single Limit Bodily Injury and Property Damage or $100,000 Bodily Injury Per Person, $300,000 Per Occurrence and $50,000 Property Damage (100/300/50) - No Deductible
All Other States	$300,000 Combined Single Limit Bodily Injury and Property Damage or $100,000 Bodily Injury Per Person, $300,000 Per Occurrence and $50,000 Property Damage (100/300/50) - No Deductible

(ii) Physical Damage Insurance (Collision & Comprehensive): Actual cash value of the applicable Vehicle. Maximum deductible of $500 per occurrence - Collision and $250 per occurrence - Comprehensive).

If the requirements of any governmental or regulatory agency exceed the minimums stated in this Agreement, Lessee must obtain and maintain the higher insurance requirements. Lessee agrees that each required policy of insurance will by appropriate endorsement or otherwise name Lessor and any other person or entity designated by Lessor as additional insureds and loss payees, as their respective interests may appear. Further, each such insurance policy must provide the following: (i) that the same may not be cancelled, changed or modified until after the insurer has given to Lessor, Servicer and any other person or entity designated by Lessor at least thirty (30) days prior written notice of such proposed cancellation, change or modification, (ii) that no act or default of Lessee or any other person or entity shall affect the right of Lessor, Servicer, any other agent of Lessor or any of their respective successors or assigns to recover under such policy or policies of insurance in the event of any loss of or damage to any Vehicle and (iii) that the coverage is "primary coverage" for the protection of Lessee, Lessor, Servicer, any other agent of Lessor and their respective successors and assigns notwithstanding any other coverage carried by Lessee, Lessor, Servicer, any other agent of Lessor or any of their respective successors or assigns protecting against similar risks. Original certificates evidencing such coverage and naming Lessor, Servicer, any other agent of Lessor and any other person or entity designated by Lessor as additional insureds and loss payees shall be furnished to Lessor prior to the Delivery Date, and annually thereafter and/or as reasonably requested by Lessor from time to time. In the event of default, Lessee hereby appoints Lessor, Servicer and any other agent of Lessor as Lessee's attorney-in-fact to receive payment of, to endorse all checks and other documents and to take any other actions necessary to pursue insurance claims and recover payments if Lessee fails to do so. Any expense of Lessor, Servicer or any other agent of Lessor in adjusting or collecting insurance shall be borne by Lessee.

Lessee, its drivers, servants and agents agree to cooperate fully with Lessor, Servicer, any other agent of Lessor and any insurance carriers in the investigation, defense and prosecution of all claims or suits arising from the use or operation of any Vehicle. If any claim is made or action commenced for death, personal injury or property damage resulting from the ownership, maintenance, use or operation of any Vehicle, Lessee will promptly notify Lessor of such action or claim and forward to Lessor a copy of every demand, notice, summons or other process received in connection with such claim or action.

(b) Notwithstanding the provisions of Section 11(a) above: (i) if Section 4 of a Schedule includes a charge for physical damage waiver, Lessor agrees that (A) Lessee will not be required to obtain or maintain the minimum physical damage insurance (collision and comprehensive) required under Section 11(a) for the Vehicle(s) covered by such Schedule and (B) Lessor will assume the risk of physical damage (collision and comprehensive) to the Vehicle(s) covered by such Schedule; provided, however, that such physical damage waiver shall not apply to, and Lessee shall be and remain liable and responsible for, damage to a covered Vehicle caused by wear and tear or mechanical breakdown or failure, damage to or loss of any parts, accessories or components added to a covered

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Vehicle by Lessee without the prior written consent of Lessor and/or damage to or loss of any property and/or personal effects contained in a covered Vehicle. In the event of a Casualty Occurrence to a covered Vehicle, Lessor may, at its option, replace, rather than repair, the damaged Vehicle with an equivalent vehicle, which replacement vehicle will then constitute the "Vehicle" for purposes of this Agreement; and (ii) if Section 4 of a Schedule includes a charge for commercial automobile liability enrollment, Lessor agrees that it will, at its expense, obtain for and on behalf of Lessee, by adding Lessee as an additional insured under a commercial automobile liability insurance policy issued by an insurance company selected by Lessor, commercial automobile liability insurance satisfying the minimum commercial automobile liability insurance required under Section 11(a) for the Vehicle(s) covered by such Schedule. Lessor may at any time during the applicable Term terminate said obligation to provide physical damage waiver and/or commercial automobile liability enrollment and cancel such physical damage waiver and/or commercial automobile liability enrollment upon giving Lessee at least ten (10) days prior written notice. Upon such cancellation, insurance in the minimum amounts as set forth in 11(a) shall be obtained and maintained by Lessee at Lessee's expense. An adjustment will be made in monthly rental charges payable by Lessee to reflect any such change and Lessee agrees to furnish Lessor with satisfactory proof of insurance coverage within ten (10) days after mailing of the notice. In addition, Lessor may change the rates charged by Lessor under this Section 11(b) for physical damage waiver and/or commercial automobile liability enrollment upon giving Lessee at least thirty (30) days prior written notice.

12. INDEMNITY: To the extent permitted by state law, Lessee agrees to defend and indemnify Lessor, Servicer, any other agent of Lessor and their respective successors and assigns from and against any and all losses, damages, liabilities, suits, claims, demands, costs and expenses (including, without limitation, reasonable attorneys' fees and expenses) which Lessor, Servicer, any other agent of Lessor or any of their respective successors or assigns may incur by reason of Lessee's breach or violation of, or failure to observe or perform, any term, provision or covenant of this Agreement, or as a result of any loss, damage, theft or destruction of any Vehicle or related to or arising out of or in connection with the use, operation or condition of any Vehicle. The provisions of this Section 12 shall survive any expiration or termination of this Agreement. Nothing herein shall be deemed to affect the rights, privileges, and immunities of Lessee and the foregoing indemnity provision is not intended to be a waiver of any sovereign immunity afforded to Lessee pursuant to the law.

13. INSPECTION OF VEHICLES; ODOMETER DISCLOSURE; FINANCIAL STATEMENTS: Lessee agrees to accomplish, at its expense, all inspections of the Vehicles required by any governmental authority during the Term. Lessor, Servicer, any other agent of Lessor and any of their respective successors or assigns will have the right to inspect any Vehicle at any reasonable time(s) during the Term and for this purpose to enter into or upon any building or place where any Vehicle is located. Lessee agrees to comply with all odometer disclosure laws, rules and regulations and to provide such written and signed disclosure information on such forms and in such manner as directed by Lessor. Providing false information or failure to complete the odometer disclosure form as required by law may result in fines and/or imprisonment. Lessee hereby agrees to promptly deliver to Lessor such financial statements and other financial information regarding Lessee as Lessor may from time to time reasonably request.

14. DEFAULT; REMEDIES: The following shall constitute events of default ("Events of Default") by Lessee under this Agreement: (a) if Lessee fails to pay when due any rent or other amount due under this Agreement and any such failure shall remain unremedied for ten (10) days; (b) if Lessee fails to perform, keep or observe any term, provision or covenant contained in Section 11 of this Agreement; (c) if Lessee fails to perform, keep or observe any other term, provision or covenant contained in this Agreement and any such failure shall remain unremedied for thirty (30) days after written notice thereof is given by Lessor, Servicer or any other agent of Lessor to Lessee; (d) any seizure or confiscation of any Vehicle or any other act (other than a Casualty Occurrence) otherwise rendering any Vehicle unsuitable for use (as determined by Lessor); (e) if any present or future guaranty in favor of Lessor of all or any portion of the obligations of Lessee under this Agreement shall at any time for any reason cease to be in full force and effect or shall be declared to be null and void by a court of competent jurisdiction, or if the validity or enforceability of any such guaranty shall be contested or denied by any guarantor, or if any guarantor shall deny that it, he or she has any further liability or obligation under any such guaranty or if any guarantor shall fail to comply with or observe any of the terms, provisions or conditions contained in any such guaranty; (f) the occurrence of a material adverse change in the financial condition or business of Lessee or any guarantor; or (g) if Lessee or any guarantor is in default under or fails to comply with any other present or future agreement with or in favor of Lessor, The Crawford Group, Inc. or any direct or indirect subsidiary of The Crawford Group, Inc.. For purposes of this Section 14, the term "guarantor" shall mean any present or future guarantor of all or any portion of the obligations of Lessee under this Agreement.

Upon the occurrence of any Event of Default, Lessor, without notice to Lessee, will have the right to exercise concurrently or separately (and without any election of remedies being deemed made), the following remedies: (a) Lessor may demand and receive immediate possession of any or all of the Vehicles from Lessee, without releasing Lessee from its obligations under this Agreement; if Lessee fails to surrender possession of the Vehicles to Lessor on default (or termination or expiration of the Term), Lessor, Servicer, any other agent of Lessor and any of Lessor's independent contractors shall have the right to enter upon any premises where the Vehicles may be located and to remove and repossess the Vehicles; (b) Lessor may enforce performance by Lessee of its obligations under this Agreement; (c) Lessor may recover damages and expenses sustained by Lessor, Servicer, any other agent of Lessor or any of their respective successors or assigns by reason of Lessee's default including, to the extent permitted by applicable law, all costs and expenses, including court costs and reasonable attorneys' fees and expenses, incurred by Lessor, Servicer, any other agent of Lessor or any of their respective successors or assigns in attempting or effecting enforcement of Lessor's rights under this Agreement (whether or not litigation is commenced) and/or in connection with bankruptcy or insolvency proceedings; (d) upon written notice to Lessee, Lessor may terminate Lessee's rights under this Agreement; (e) with respect to each Vehicle, Lessor may recover from Lessee all amounts owed by Lessee under Sections 3(b) and 3(c) of this Agreement (and, if Lessor does not recover possession of a Vehicle, (i) the estimated wholesale value of such Vehicle for purposes of Section 3(c) shall be deemed to be $0.00 and (ii) the calculations described in the first two sentences of Section 3(c) shall be made without giving effect to clause (ii) in each such sentence); and/or (f) Lessor may exercise any other right or remedy which may be available to Lessor under the Uniform Commercial Code, any other applicable law or in equity. A termination of this Agreement shall occur only upon written notice by Lessor to Lessee. Any termination shall not affect Lessee's obligation to pay all amounts due for periods prior to the effective date of such termination or Lessee's obligation to pay any indemnities under this Agreement. All remedies of Lessor under this Agreement or at law or in equity are cumulative.

15. ASSIGNMENTS: Lessor may from time to time assign, pledge or transfer this Agreement and/or any or all of its rights and obligations under this Agreement to any person or entity. Lessee agrees, upon notice of any such assignment, pledge or transfer of any amounts due or to become due to Lessor under this Agreement to pay all such amounts to such assignee, pledgee or transferee. Any such assignee, pledgee or transferee of any rights or obligations of Lessor under this Agreement will have all of the rights and obligations that have been assigned to it. Lessee's rights and interest in and to the Vehicles are and will continue

Initials: EFM_____ Customer_____

at all times to be subject and subordinate in all respects to any assignment, pledge or transfer now or hereafter executed by Lessor with or in favor of any such assignee, pledgee or transferee, provided that Lessee shall have the right of quiet enjoyment of the Vehicles so long as no Event of Default under this Agreement has occurred and is continuing. Lessee acknowledges and agrees that the rights of any assignee, pledgee or transferee in and to any amounts payable by the Lessee under any provisions of this Agreement shall be absolute and unconditional and shall not be subject to any abatement whatsoever, or to any defense, setoff, counterclaim or recoupment whatsoever, whether by reason of any damage to or loss or destruction of any Vehicle or by reason of any defect in or failure of title of the Lessor or interruption from whatsoever cause in the use, operation or possession of any Vehicle, or by reason of any indebtedness or liability howsoever and whenever arising of the Lessor or any of its affiliates to the Lessee or to any other person or entity, or for any other reason.

Without the prior written consent of Lessor, Lessee may not assign, sublease, transfer or pledge this Agreement, any Vehicle, or any interest in this Agreement or in and to any Vehicle, or permit its rights under this Agreement or any Vehicle to be subject to any lien, charge or encumbrance. Lessee's interest in this Agreement is not assignable and cannot be assigned or transferred by operation of law. Lessee will not transfer or relinquish possession of any Vehicle (except for the sole purpose of repair or service of such Vehicle) without the prior written consent of Lessor.

16. MISCELLANEOUS: This Agreement contains the entire understanding of the parties. This Agreement may only be amended or modified by an instrument in writing executed by both parties. Lessor shall not by any act, delay, omission or otherwise be deemed to have waived any of its rights or remedies under this Agreement and no waiver whatsoever shall be valid unless in writing and signed by Lessor and then only to the extent therein set forth. A waiver by Lessor of any right or remedy under this Agreement on any one occasion shall not be construed as a bar to any right or remedy, which Lessor would otherwise have on any future occasion. If any term or provision of this Agreement or any application of any such term or provision is invalid or unenforceable, the remainder of this Agreement and any other application of such term or provision will not be affected thereby. Giving of all notices under this Agreement will be sufficient if mailed by certified mail to a party at its address set forth below or at such other address as such party may provide in writing from time to time. Any such notice mailed to such address will be effective one (1) day after deposit in the United States mail, duly addressed, with certified mail, postage prepaid. Lessee will promptly notify Lessor of any change in Lessee's address. This Agreement may be executed in multiple counterparts (including facsimile and pdf counterparts), but the counterpart marked "ORIGINAL" by Lessor will be the original lease for purposes of applicable law. All of the representations, warranties, covenants, agreements and obligations of each Lessee under this Agreement (if more than one) are joint and several.

17. SUCCESSORS AND ASSIGNS; GOVERNING LAW: Subject to the provisions of Section 15, this Agreement will be binding upon Lessee and its heirs, executors, personal representatives, successors and assigns, and will inure to the benefit of Lessor, Servicer, any other agent of Lessor and their respective successors and assigns. This Agreement will be governed by and construed in accordance with the substantive laws of the State of Missouri (determined without reference to conflict of law principles).

18. NON-PETITION: Each party hereto hereby covenants and agrees that, prior to the date which is one year and one day after payment in full of all indebtedness of Lessor, it shall not institute against, or join any other person in instituting against, Lessor any bankruptcy, reorganization, arrangement, insolvency or liquidation proceedings or other similar proceeding under the laws of the United States or any state of the United States. The provisions of this Section 18 shall survive termination of this Master Equity Lease Agreement.

19. NON-APPROPRIATION: Lessee's funding of this Agreement shall be on a Fiscal Year basis and is subject to annual appropriations. Lessor acknowledges that Lessee is a municipal corporation, is precluded by the County or State Constitution and other laws from entering into obligations that financially bind future governing bodies, and that, therefore, nothing in this Agreement shall constitute an obligation of future legislative bodies of the County or State to appropriate funds for purposes of this Agreement. Accordingly, the parties agree that the lease terms within this Agreement or any Schedules relating hereto are contingent upon appropriation of funds. The parties further agree that should the County or State fail to appropriate such funds, the Lessor shall be paid all rentals due and owing hereunder up until the actual day of termination. In addition, Lessor reserves the right to be paid for any reasonable damages. These reasonable damages will be limited to the losses incurred by the Lessor for having to sell the vehicles on the open used car market prior to the end of the scheduled term (as determined in Section 3 and Section 14 of this Agreement).

IN WITNESS WHEREOF, Lessor and Lessee have duly executed this Master Equity Lease Agreement as of the day and year first above written.

LESSEE: _____

Signature: _____

By: _____

Title: _____

Address: _____

_____

_____

Date Signed: _____, _____

LESSOR: Enterprise FM Trust
By: Enterprise Fleet Management, Inc. its attorney in fact

Signature: _____

By: _____

Title: _____

Address: _____

_____

_____

Date Signed: _____, _____

Initials: EFM_____ Customer_____

ATTACHMENT 7
Estimated Equity Lease Costs

ESTIMATED EQUITY LEASE COSTS

VEHICLE	TERM	CAPITALIZED COST	AFTERMARKET COST FROM UNPLUGGED (INCLUDED IN CAPITALIZED COST)	25% CAPITALIZED PRICE REDUCTION (MONEY DOWN)	AVERAGE GAIN ON PRIOR FROM SELLING 20 CITY-OWNED VEHICLES	MONTHLY LEASE PAYMENT WITH TAX	QUANTITY	TOTAL MONTHLY COST x QTY	ANNUAL COST x QTY	TOTAL MONEY DOWN x QTY
2022 TESLA MODEL Y PATROL	60	$109,764	$40,874	$25,814.75	$6,970	$1,700.80	9	$15,307.20	$183,686.40	$232,332.75
2022 TESLA MODEL Y K9	60	$112,356	$43,466	$26,462.75	$6,970	$1,743.21	1	$1,743.21	$20,918.52	$26,462.75
2022 TESLA MODEL 3 DETECTIVE	60	$56,264	$6,324	$12,439.75	$6,970	$825.67	9	$7,431.03	$89,172.36	$111,957.75
2022 TESLA MODEL Y CADET	60	$58,499	$8,559	$12,998.50	$6,970	$862.24	1	$862.24	$10,346.88	$12,998.50
							20	**$25,343.68**	**$304,124.16**	**$383,751.75**

YEAR 1 COST	$687,876
YEAR 2 COST	$304,124
YEAR 3 COST	$304,124
YEAR 4 COST	$304,124
YEAR 5 COST	$304,124
	$1,904,373

Estimated Wholesale Value at	Reduced Book Value at Term	Estimated Equity at	Estimated Equity x QTY
$19,000.00	$7,744.65	$11,255.35	$101,298.15
$19,000.00	$7,939.05	$11,060.95	$11,060.95
$16,000.00	$3,731.85	$12,268.15	$110,413.35
$16,000.00	$3,899.70	$12,100.30	$12,100.30

Estimated Equity at 60-Month Term (2027) **$234,872.75**

ATTACHMENT 8
Enterprise Proposals

Open-End (Equity) Lease Proposal

Date: 06/20/2022

Prepared For: City of South Pasadena (547143)

Proposal Summary

Proposal #: P613482

Prepared For:

Quantity: 9

Driver Information					Base Lease Payment										Initial Charges Billed upon Delivery		
Quote	Driver	ST	Use Tax Rate	Expected Annual Mileage	Capitalized Amount (Delivered Price per Vehicle)	Lease Term	Depr Rate	Depr Amount	Lease Charge[1]	Monthly Use Tax	Full Maint Program[2]	Additional Services[3]	Total Monthly Payment inc. Tax and Addl Services	Book Value at Term	Initial Charges[4]	License, Registration, Certain Other Charges and Tax	Total Initial Charges Billed upon Delivery
2022 Tesla Model 3 Base 4dr Rear-Wheel Drive Sedan - US				**(0 P) Solid Black / (0 I) Black w/Premium Seat Trim**													
6452008	DETECTIVE	CA	10.2500%	15,000	$37,319.25	60	1.5000%	$559.79	$186.65	$76.76			$825.67	$3,731.85	$12,439.75	$1,989.50	$14,429.25
6452009	DETECTIVE	CA	10.2500%	15,000	$37,319.25	60	1.5000%	$559.79	$186.65	$76.76			$825.67	$3,731.85	$12,439.75	$1,989.50	$14,429.25
6452010	DETECTIVE	CA	10.2500%	15,000	$37,319.25	60	1.5000%	$559.79	$186.65	$76.76			$825.67	$3,731.85	$12,439.75	$1,989.50	$14,429.25
6452012	DETECTIVE	CA	10.2500%	15,000	$37,319.25	60	1.5000%	$559.79	$186.65	$76.76			$825.67	$3,731.85	$12,439.75	$1,989.50	$14,429.25
6452013	DETECTIVE	CA	10.2500%	15,000	$37,319.25	60	1.5000%	$559.79	$186.65	$76.76			$825.67	$3,731.85	$12,439.75	$1,989.50	$14,429.25
6452014	DETECTIVE	CA	10.2500%	15,000	$37,319.25	60	1.5000%	$559.79	$186.65	$76.76			$825.67	$3,731.85	$12,439.75	$1,989.50	$14,429.25
6452015	DETECTIVE	CA	10.2500%	15,000	$37,319.25	60	1.5000%	$559.79	$186.65	$76.76			$825.67	$3,731.85	$12,439.75	$1,989.50	$14,429.25
6452016	DETECTIVE	CA	10.2500%	15,000	$37,319.25	60	1.5000%	$559.79	$186.65	$76.76			$825.67	$3,731.85	$12,439.75	$1,989.50	$14,429.25
6452017	DETECTIVE	CA	10.2500%	15,000	$37,319.25	60	1.5000%	$559.79	$186.65	$76.76			$825.67	$3,731.85	$12,439.75	$1,989.50	$14,429.25
										Total Monthly Payment for 9 vehicles:			**$7,431.03**		**Total Initial Charges for 9 vehicles:**		**$129,863.25**

Initials

Open-End (Equity) Lease Proposal

Date: 06/20/2022

Prepared For: City of South Pasadena (547143)

Prepared For:

Proposal Summary

Proposal #: P613482

Quantity: 9

[1]Monthly Lease Charge will be adjusted to reflect the interest rate on the delivery date (subject to a floor)

[2]See the following pages for details of Full Maintenance Service

[3]Additional Services may include Commercial Automotive Liability Enrollment or Physical Damage Management

[4]Excludes License, Registration, Certain Charges, and Tax

Current market and vehicle conditions may also affect value of vehicles.

Proposal is subject to Customer's Credit Approval.

Enterprise FM Trust will be the owner of the vehicles covered by this Proposal. Enterprise FM Trust (not Enterprise Fleet Management) will be the Lessor of such vehicles under the Master Open-End (Equity) Lease Agreement and shall have all rights and obligations of the Lessor under the Master Open-End (Equity) Lease Agreement with respect to such vehicles.

Lessee hereby authorizes this vehicle order, agrees to lease the vehicles on the terms set forth herein and in the Master Equity Lease Agreement and agrees that Lessor shall have the right to collect damages in the event Lessee fails or refuses to accept delivery of the ordered vehicles. Lessee certifies that it intends that more than 50% of the use of the vehicles is to be in a trade or business of the Lessee.

Lessee: City of South Pasadena

Signature Title Date

enterprise | FLEET MANAGEMENT

Open-End (Equity) Lease Proposal

Date: 06/20/2022

Prepared For: City of South Pasadena (547143)

Prepared For:

Capitalized Amount Calculations

Proposal #: P613482

Quantity: 9

Quote	Capitalized Prices/ Billed on Delivery	Manufacturer Invoice Price	Incentives & Rebates	Adjustment	Capitalized Price of Vehicle[1]	Certain Other Charges	Initial License & Registration Fee	Capitalized Price Reduction	Certain Other Charges on CPR	Gain Applied from Prior Unit	Certain Other Charges on GOP	Tax on Incentives	Aftermarket Equipment	Courtesy Delivery / Dealer Prep Fee	Delivery Charge	Other Costs	Total
2022 Tesla Model 3 Base 4dr Rear-Wheel Drive Sedan - US (0 P) Solid Black / (0 I) Black w/Premium Seat Trim																	
6452008	Capitalized Price	$49,940.00	$0.00	$0.00	$49,940.00		$0.00	($12,439.75)		($6,970.00)			$6,324.00	$200.00	$125.00	$140.00	$37,319.25
	Billed on Delivery					$0.00	$0.00	$12,439.75	$1,275.07		$714.43	$0.00	$0.00	$0.00	$0.00	$0.00	$14,429.25
6452009	Capitalized Price	$49,940.00	$0.00	$0.00	$49,940.00		$0.00	($12,439.75)		($6,970.00)			$6,324.00	$200.00	$125.00	$140.00	$37,319.25
	Billed on Delivery					$0.00	$0.00	$12,439.75	$1,275.07		$714.43	$0.00	$0.00	$0.00	$0.00	$0.00	$14,429.25
6452010	Capitalized Price	$49,940.00	$0.00	$0.00	$49,940.00		$0.00	($12,439.75)		($6,970.00)			$6,324.00	$200.00	$125.00	$140.00	$37,319.25
	Billed on Delivery					$0.00	$0.00	$12,439.75	$1,275.07		$714.43	$0.00	$0.00	$0.00	$0.00	$0.00	$14,429.25
6452012	Capitalized Price	$49,940.00	$0.00	$0.00	$49,940.00		$0.00	($12,439.75)		($6,970.00)			$6,324.00	$200.00	$125.00	$140.00	$37,319.25
	Billed on Delivery					$0.00	$0.00	$12,439.75	$1,275.07		$714.43	$0.00	$0.00	$0.00	$0.00	$0.00	$14,429.25
6452013	Capitalized Price	$49,940.00	$0.00	$0.00	$49,940.00		$0.00	($12,439.75)		($6,970.00)			$6,324.00	$200.00	$125.00	$140.00	$37,319.25
	Billed on Delivery					$0.00	$0.00	$12,439.75	$1,275.07		$714.43	$0.00	$0.00	$0.00	$0.00	$0.00	$14,429.25
6452014	Capitalized Price	$49,940.00	$0.00	$0.00	$49,940.00		$0.00	($12,439.75)		($6,970.00)			$6,324.00	$200.00	$125.00	$140.00	$37,319.25
	Billed on Delivery					$0.00	$0.00	$12,439.75	$1,275.07		$714.43	$0.00	$0.00	$0.00	$0.00	$0.00	$14,429.25
6452015	Capitalized Price	$49,940.00	$0.00	$0.00	$49,940.00		$0.00	($12,439.75)		($6,970.00)			$6,324.00	$200.00	$125.00	$140.00	$37,319.25
	Billed on Delivery					$0.00	$0.00	$12,439.75	$1,275.07		$714.43	$0.00	$0.00	$0.00	$0.00	$0.00	$14,429.25
6452016	Capitalized Price	$49,940.00	$0.00	$0.00	$49,940.00		$0.00	($12,439.75)		($6,970.00)			$6,324.00	$200.00	$125.00	$140.00	$37,319.25
	Billed on Delivery					$0.00	$0.00	$12,439.75	$1,275.07		$714.43	$0.00	$0.00	$0.00	$0.00	$0.00	$14,429.25
6452017	Capitalized Price	$49,940.00	$0.00	$0.00	$49,940.00		$0.00	($12,439.75)		($6,970.00)			$6,324.00	$200.00	$125.00	$140.00	$37,319.25
	Billed on Delivery					$0.00	$0.00	$12,439.75	$1,275.07		$714.43	$0.00	$0.00	$0.00	$0.00	$0.00	$14,429.25

Initials

ALL TAX AND LICENSE FEES TO BE BILLED TO LESSEE AS THEY OCCUR.

[1]Capitalized price of vehicles may be adjusted to reflect final manufacturer's invoice. Lessee hereby assigns to Lessor any manufacturer rebates and/or manufacturer incentives intended for the Lessee, which rebates and/or incentives have been used by Lessor to reduce the capitalized price of the vehicles.

All language and acknowledgments contained in the signed proposal apply to all vehicles listed on the 'Equity Lease Proposal Summary' page of this document. In addition, you may incur additional fees required to register and operate these vehicles in accordance with various state, county, and city titling, registration, and tax laws.

Initials

Aftermarket Equipment

Quote	Driver	Description	Capitalized Price	Billed Price
2022 Tesla Model 3 Base 4dr Rear-Wheel Drive Sedan - US	**(0 P) Solid Black / (0 I) Black w/Premium Seat Trim**			
6452008	DETECTIVE	Lighting - Unplugged Quote #2543	$6,324.00	
6452009	DETECTIVE	Lighting - Unplugged Quote #2543	$6,324.00	
6452010	DETECTIVE	Lighting - Unplugged Quote #2543	$6,324.00	
6452012	DETECTIVE	Lighting - Unplugged Quote #2543	$6,324.00	
6452013	DETECTIVE	Lighting - Unplugged Quote #2543	$6,324.00	
6452014	DETECTIVE	Lighting - Unplugged Quote #2543	$6,324.00	
6452015	DETECTIVE	Lighting - Unplugged Quote #2543	$6,324.00	
6452016	DETECTIVE	Lighting - Unplugged Quote #2543	$6,324.00	
6452017	DETECTIVE	Lighting - Unplugged Quote #2543	$6,324.00	
		Total Aftermarket Equipment	**$56,916.00**	**$0.00**

Other Costs

Quote	Driver	Description	Capitalized Price	Billed Price
2022 Tesla Model 3 Base 4dr Rear-Wheel Drive Sedan - US	**(0 P) Solid Black / (0 I) Black w/Premium Seat Trim**			
6452008	DETECTIVE	Initial Administration Fee	$140.00	
6452009	DETECTIVE	Initial Administration Fee	$140.00	
6452010	DETECTIVE	Initial Administration Fee	$140.00	

Quote	Driver	Description	Capitalized Price	Billed Price
6452012	DETECTIVE	Initial Administration Fee	$140.00	
6452013	DETECTIVE	Initial Administration Fee	$140.00	
6452014	DETECTIVE	Initial Administration Fee	$140.00	
6452015	DETECTIVE	Initial Administration Fee	$140.00	
6452016	DETECTIVE	Initial Administration Fee	$140.00	
6452017	DETECTIVE	Initial Administration Fee	$140.00	
		Total Other Costs	**$1,260.00**	**$0.00**

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Quantity: 9

VEHICLE INFORMATION:

2022 Tesla Model 3 Base 4dr Rear-Wheel Drive Sedan - US
Series ID: MODEL3SRP

Pricing Summary:

	INVOICE	MSRP
Base Vehicle	$ 46,990.00	$ 46,990.00
Total Options	$ 1,750.00	$ 1,750.00
Destination Charge	$ 1,200.00	$ 1,200.00
Total Price	**$ 49,940.00**	**$ 49,940.00**

SELECTED COLOR:

Exterior:	SOLB - (0 P) Solid Black
Interior:	BLK - (0 I) Black w/Premium Seat Trim

SELECTED OPTIONS:

CODE	DESCRIPTION	INVOICE	MSRP
BLK_02	(0 I) Black w/Premium Seat Trim	NC	NC
FEE	Non-Refundable Order Fee	$ 250.00	$ 250.00
PAINT	Monotone Paint	STD	STD
SOLB_02	(0 P) Solid Black	$ 1,500.00	$ 1,500.00
STDEN	Motor: AC Permanent Magnet	STD	STD
STDRD	Radio: Upgraded Audio System	STD	STD
STDST	Premium Heated Front Bucket Seats	STD	STD
STDTM	Premium Seat Trim	STD	STD
STDTN	Transmission: 1-Speed Automatic	STD	STD
STDTR	Tires: P235/45R18	STD	STD
STDWL	Wheels: 18" x 8.5" Aero	STD	STD

CONFIGURED FEATURES:

Body Exterior Features:

- Number Of Doors 4
- Rear Cargo Door Type: power open and close trunk
- Driver And Passenger Mirror: auto dimming power remote heated power folding side-view door mirrors with tilt down
- Skid Plates: skid plates
- Door Handles: black
- Front And Rear Bumpers: body-coloured front and rear bumpers
- Body Material: galvanized steel/aluminum body material

Convenience Features:

- Air Conditioning automatic dual-zone front air conditioning
- Air Filter: air filter
- Console Ducts: console ducts
- Steering Wheel A/C Controls: steering-wheel mounted A/C controls
- Power Sunroof: 1st row fixed laminated glass sunroof
- 2nd Row Sunroof: fixed laminated glass 2nd row sunroof
- Seat Memory: 3 driver memory seat settings (includes door mirrors, steering wheel,)
- Cruise Control: cruise control with steering wheel controls, Traffic-Aware Cruise Control distance pacing
- Trunk/Hatch/Door Remote Release: power cargo access remote release
- Power Windows: power windows with front and rear 1-touch down
- Remote Keyless Entry: smart device-as-key remote keyless entry
- Illuminated Entry: illuminated entry
- Integrated Key Remote: integrated key/remote
- Auto Locking: auto-locking doors
- Passive Entry: proximity key
- Valet Key: valet function
- Trunk FOB Controls: keyfob trunk/hatch/door release
- Window FOB Controls: remote window controls
- Steering Wheel: heated steering wheel with power tilting, power telescoping
- Day-Night Rearview Mirror: day-night rearview mirror
- Auto-dimming Rearview Mirror: auto-dimming rearview mirror
- Driver and Passenger Vanity Mirror: illuminated auxiliary driver and passenger-side visor mirrors
- Navigation System: navigation system with voice activation
- Front Cupholder: front and rear cupholders
- Floor Console: full floor console with covered box
- Glove Box: illuminated locking glove box
- Driver Door Bin: driver and passenger door bins
- Rear Door Bins: rear door bins
- Seatback Storage Pockets: 2 seatback storage pockets
- IP Storage: covered bin instrument-panel storage
- Driver Footrest: driver's footrest
- Retained Accessory Power: retained accessory power
- Power Accessory Outlet: 1 12V DC power outlet

Entertainment Features:

- radio FM/HD with seek-scan
- Radio Data System: radio data system
- Voice Activated Radio: voice activated radio
- Steering Wheel Radio Controls: steering-wheel mounted audio controls
- Speakers: 8 speakers
- Entertainment Centre: entertainment system with digital media
- Internet Access: internet access
- 1st Row LCD: 1 1st row LCD monitor
- Wireless Connectivity: wireless phone connectivity
- Antenna: window grid antenna

Lighting, Visibility and Instrumentation Features:

- Headlamp Type delay-off projector beam LED low/high beam headlamps
- Auto-levelling Headlights: auto-leveling headlights
- Auto-Dimming Headlights: auto high-beam headlights
- Front Wipers: variable intermittent wipers with heating wiper park

Rear Window Defroster: rear window defroster
Tinted Windows: light-tinted windows
Dome Light: dome light with fade
Front Reading Lights: front and rear reading lights
Door Curb/Courtesy Lights: 4 door curb/courtesy lights
Variable IP Lighting: variable instrument panel lighting
Display Type: digital appearance
Compass: compass
Exterior Temp: outside-temperature display
Low Tire Pressure Warning: tire specific low-tire-pressure warning
Park Distance Control: front and rear parking sensors
Trip Computer: trip computer
Trip Odometer: trip odometer
Lane Departure Warning: lane departure
Blind Spot Sensor: blind spot
Front Pedestrian Braking: pedestrian detection
Forward Collision Alert: forward collision
Clock: in-dash clock
Systems Monitor: systems monitor
Rear Vision Camera: rear vision camera
Battery Warning: battery warning
Lights On Warning: lights-on warning
Key in Ignition Warning: key-in-ignition warning
Door Ajar Warning: door-ajar warning
Trunk Ajar Warning: trunk-ajar warning
Brake Fluid Warning: brake-fluid warning

Safety And Security:

ABS four-wheel ABS brakes
Number of ABS Channels: 4 ABS channels
Brake Assistance: brake assist
Brake Type: four-wheel disc brakes
Vented Disc Brakes: front and rear ventilated disc brakes
Daytime Running Lights: daytime running lights
Driver Front Impact Airbag: driver and passenger front-impact airbags
Driver Side Airbag: seat-mounted driver and passenger side-impact airbags
Overhead Airbag: curtain 1st and 2nd row overhead airbag
Knee Airbag: knee airbag
Occupancy Sensor: front passenger airbag occupancy sensor
Height Adjustable Seatbelts: height adjustable front seatbelts
Seatbelt Pretensioners: front and rear seatbelt pre-tensioners
3Point Rear Centre Seatbelt: 3 point rear centre seatbelt
Side Impact Bars: side-impact bars
Perimeter Under Vehicle Lights: perimeter/approach lights
Tailgate/Rear Door Lock Type: tailgate/rear door lock included with power door locks
Rear Child Safety Locks: rear child safety locks
Ignition Disable: immobilizer
Security System: security system with video recording
Tracker System: tracker system
Electronic Stability: electronic stability
Traction Control: ABS and driveline traction control
Front and Rear Headrests: fixed front head restraints
Rear Headrest Control: 2 rear head restraints
Break Resistant Glass: break resistant glass

Seats And Trim:

Seating Capacity max. seating capacity of 5
Front Bucket Seats: front bucket seats
Front Heated Cushion: driver and passenger heated-cushions
Front Heated Seatback: driver and passenger heated-seatbacks
Heated Rear Seat: heated rear seat
Number of Driver Seat Adjustments: 8-way driver and passenger seat adjustments

Reclining Driver Seat: power reclining driver and passenger seats
Driver Lumbar: power 4-way driver and passenger lumbar support
Driver Height Adjustment: power height-adjustable driver and passenger seats
Driver Fore/Aft: power driver and passenger fore/aft adjustment
Driver Cushion Tilt: power driver and passenger cushion tilt
Front Centre Armrest Storage: front centre armrest
Rear Seat Type: rear 60-40 bench seat
Rear Folding Position: rear seat fold-forward seatback
Rear Seat Armrest: rear seat centre armrest
Leather Upholstery: leatherette front and rear seat upholstery
Door Trim Insert: simulated suede door panel trim
Headliner Material: full cloth headliner
Floor Covering: full carpet floor covering
Dashboard Console Insert, Door Panel Insert Combination: aluminum/genuine wood instrument panel insert, door panel insert, console insert
LeatherSteeringWheel: leatherette steering wheel
Interior Accents: metal-look interior accents
Cargo Space Trim: carpet cargo space
Trunk Lid: plastic trunk lid/rear cargo door
Cargo Light: cargo light
Concealed Cargo Storage: concealed cargo storage

Standard Engine:
Engine (electric)

Standard Transmission:
Transmission 1-speed automatic

Open-End (Equity) Lease Proposal

Date: 06/21/2022

Prepared For: City of South Pasadena (547143)

Proposal Summary

Proposal #: P613632

Prepared For:

Quantity: 9

Driver Information					Base Lease Payment										Initial Charges Billed upon Delivery		
Quote	Driver	ST	Use Tax Rate	Expected Annual Mileage	Capitalized Amount (Delivered Price per Vehicle)	Lease Term	Depr Rate	Depr Amount	Lease Charge[1]	Monthly Use Tax	Full Maint Program[2]	Additional Services[3]	Total Monthly Payment inc. Tax and Addl Services	Book Value at Term	Initial Charges[4]	License, Registration, Certain Other Charges and Tax	Total Initial Charges Billed upon Delivery
2022 Tesla Model Y Long Range 4dr All-Wheel Drive Sport Utility - US					**(0 P) Solid Black / (0 I) Black w/Premium Seat Trim**												
6452087	Patrol	CA	10.2500%	15,000	$77,444.25	60	1.5000%	$1,161.66	$381.02	$158.12			$1,700.80	$7,744.65	$25,814.75	$3,360.44	$29,175.19
6452088	Patrol	CA	10.2500%	15,000	$77,444.25	60	1.5000%	$1,161.66	$381.02	$158.12			$1,700.80	$7,744.65	$25,814.75	$3,360.44	$29,175.19
6452089	Patrol	CA	10.2500%	15,000	$77,444.25	60	1.5000%	$1,161.66	$381.02	$158.12			$1,700.80	$7,744.65	$25,814.75	$3,360.44	$29,175.19
6452090	Patrol	CA	10.2500%	15,000	$77,444.25	60	1.5000%	$1,161.66	$381.02	$158.12			$1,700.80	$7,744.65	$25,814.75	$3,360.44	$29,175.19
6452091	Patrol	CA	10.2500%	15,000	$77,444.25	60	1.5000%	$1,161.66	$381.02	$158.12			$1,700.80	$7,744.65	$25,814.75	$3,360.44	$29,175.19
6452092	Patrol	CA	10.2500%	15,000	$77,444.25	60	1.5000%	$1,161.66	$381.02	$158.12			$1,700.80	$7,744.65	$25,814.75	$3,360.44	$29,175.19
6452093	Patrol	CA	10.2500%	15,000	$77,444.25	60	1.5000%	$1,161.66	$381.02	$158.12			$1,700.80	$7,744.65	$25,814.75	$3,360.44	$29,175.19
6452094	Patrol	CA	10.2500%	15,000	$77,444.25	60	1.5000%	$1,161.66	$381.02	$158.12			$1,700.80	$7,744.65	$25,814.75	$3,360.44	$29,175.19
6452095	Patrol	CA	10.2500%	15,000	$77,444.25	60	1.5000%	$1,161.66	$381.02	$158.12			$1,700.80	$7,744.65	$25,814.75	$3,360.44	$29,175.19
												Total Monthly Payment for 9 vehicles:	**$15,307.20**		**Total Initial Charges for 9 vehicles:**		**$262,576.71**

Initials

Open-End (Equity) Lease Proposal

Date: 06/21/2022

Prepared For: City of South Pasadena (547143)

Prepared For:

Proposal Summary

Proposal #: P613632

Quantity: 9

[1]Monthly Lease Charge will be adjusted to reflect the interest rate on the delivery date (subject to a floor)

[2]See the following pages for details of Full Maintenance Service

[3]Additional Services may include Commercial Automotive Liability Enrollment or Physical Damage Management

[4]Excludes License, Registration, Certain Charges, and Tax

Current market and vehicle conditions may also affect value of vehicles.

Proposal is subject to Customer's Credit Approval.

Enterprise FM Trust will be the owner of the vehicles covered by this Proposal. Enterprise FM Trust (not Enterprise Fleet Management) will be the Lessor of such vehicles under the Master Open-End (Equity) Lease Agreement and shall have all rights and obligations of the Lessor under the Master Open-End (Equity) Lease Agreement with respect to such vehicles.

Lessee hereby authorizes this vehicle order, agrees to lease the vehicles on the terms set forth herein and in the Master Equity Lease Agreement and agrees that Lessor shall have the right to collect damages in the event Lessee fails or refuses to accept delivery of the ordered vehicles. Lessee certifies that it intends that more than 50% of the use of the vehicles is to be in a trade or business of the Lessee.

Lessee: City of South Pasadena

Signature Title Date

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Open-End (Equity) Lease Proposal

Date: 06/21/2022

Prepared For: City of South Pasadena (547143)

Prepared For:

Capitalized Amount Calculations

Proposal #: P613632

Quantity: 9

Quote	Capitalized Prices/ Billed on Delivery	Manufacturer Invoice Price	Incentives & Rebates	Adjustment	Capitalized Price of Vehicle[1]	Certain Other Charges	Initial License & Registration Fee	Capitalized Price Reduction	Certain Other Charges on CPR	Gain Applied from Prior Unit	Certain Other Charges on GOP	Tax on Incentives	Aftermarket Equipment	Courtesy Delivery / Dealer Prep Fee	Delivery Charge	Other Costs	Total
2022 Tesla Model Y Long Range 4dr All-Wheel Drive Sport Utility - US		**(0 P) Solid Black / (0 I) Black w/Premium Seat Trim**															
6452087	Capitalized Price	$68,890.00	$0.00	$0.00	$68,890.00		$0.00	($25,814.75)		($6,970.00)			$40,874.00	$200.00	$125.00	$140.00	$77,444.25
	Billed on Delivery					$0.00	$0.00	$25,814.75	$2,646.01		$714.43	$0.00	$0.00	$0.00	$0.00	$0.00	$29,175.19
6452088	Capitalized Price	$68,890.00	$0.00	$0.00	$68,890.00		$0.00	($25,814.75)		($6,970.00)			$40,874.00	$200.00	$125.00	$140.00	$77,444.25
	Billed on Delivery					$0.00	$0.00	$25,814.75	$2,646.01		$714.43	$0.00	$0.00	$0.00	$0.00	$0.00	$29,175.19
6452089	Capitalized Price	$68,890.00	$0.00	$0.00	$68,890.00		$0.00	($25,814.75)		($6,970.00)			$40,874.00	$200.00	$125.00	$140.00	$77,444.25
	Billed on Delivery					$0.00	$0.00	$25,814.75	$2,646.01		$714.43	$0.00	$0.00	$0.00	$0.00	$0.00	$29,175.19
6452090	Capitalized Price	$68,890.00	$0.00	$0.00	$68,890.00		$0.00	($25,814.75)		($6,970.00)			$40,874.00	$200.00	$125.00	$140.00	$77,444.25
	Billed on Delivery					$0.00	$0.00	$25,814.75	$2,646.01		$714.43	$0.00	$0.00	$0.00	$0.00	$0.00	$29,175.19
6452091	Capitalized Price	$68,890.00	$0.00	$0.00	$68,890.00		$0.00	($25,814.75)		($6,970.00)			$40,874.00	$200.00	$125.00	$140.00	$77,444.25
	Billed on Delivery					$0.00	$0.00	$25,814.75	$2,646.01		$714.43	$0.00	$0.00	$0.00	$0.00	$0.00	$29,175.19
6452092	Capitalized Price	$68,890.00	$0.00	$0.00	$68,890.00		$0.00	($25,814.75)		($6,970.00)			$40,874.00	$200.00	$125.00	$140.00	$77,444.25
	Billed on Delivery					$0.00	$0.00	$25,814.75	$2,646.01		$714.43	$0.00	$0.00	$0.00	$0.00	$0.00	$29,175.19
6452093	Capitalized Price	$68,890.00	$0.00	$0.00	$68,890.00		$0.00	($25,814.75)		($6,970.00)			$40,874.00	$200.00	$125.00	$140.00	$77,444.25
	Billed on Delivery					$0.00	$0.00	$25,814.75	$2,646.01		$714.43	$0.00	$0.00	$0.00	$0.00	$0.00	$29,175.19
6452094	Capitalized Price	$68,890.00	$0.00	$0.00	$68,890.00		$0.00	($25,814.75)		($6,970.00)			$40,874.00	$200.00	$125.00	$140.00	$77,444.25
	Billed on Delivery					$0.00	$0.00	$25,814.75	$2,646.01		$714.43	$0.00	$0.00	$0.00	$0.00	$0.00	$29,175.19
6452095	Capitalized Price	$68,890.00	$0.00	$0.00	$68,890.00		$0.00	($25,814.75)		($6,970.00)			$40,874.00	$200.00	$125.00	$140.00	$77,444.25
	Billed on Delivery					$0.00	$0.00	$25,814.75	$2,646.01		$714.43	$0.00	$0.00	$0.00	$0.00	$0.00	$29,175.19

Initials

ALL TAX AND LICENSE FEES TO BE BILLED TO LESSEE AS THEY OCCUR.

[1]Capitalized price of vehicles may be adjusted to reflect final manufacturer's invoice. Lessee hereby assigns to Lessor any manufacturer rebates and/or manufacturer incentives intended for the Lessee, which rebates and/or incentives have been used by Lessor to reduce the capitalized price of the vehicles.

All language and acknowledgments contained in the signed proposal apply to all vehicles listed on the 'Equity Lease Proposal Summary' page of this document. In addition, you may incur additional fees required to register and operate these vehicles in accordance with various state, county, and city titling, registration, and tax laws.

Aftermarket Equipment

Quote	Driver	Description	Capitalized Price	Billed Price
2022 Tesla Model Y Long Range 4dr All-Wheel Drive Sport Utility - US	**(0 P) Solid Black / (0 I) Black w/Premium Seat Trim**			
6452087	Patrol	Lighting - Unplugged Quote #2539	$40,874.00	
6452088	Patrol	Lighting - Unplugged Quote #2539	$40,874.00	
6452089	Patrol	Lighting - Unplugged Quote #2539	$40,874.00	
6452090	Patrol	Lighting - Unplugged Quote #2539	$40,874.00	
6452091	Patrol	Lighting - Unplugged Quote #2539	$40,874.00	
6452092	Patrol	Lighting - Unplugged Quote #2539	$40,874.00	
6452093	Patrol	Lighting - Unplugged Quote #2539	$40,874.00	
6452094	Patrol	Lighting - Unplugged Quote #2539	$40,874.00	
6452095	Patrol	Lighting - Unplugged Quote #2539	$40,874.00	
		Total Aftermarket Equipment	**$367,866.00**	**$0.00**

Other Costs

Quote	Driver	Description	Capitalized Price	Billed Price
2022 Tesla Model Y Long Range 4dr All-Wheel Drive Sport Utility - US	**(0 P) Solid Black / (0 I) Black w/Premium Seat Trim**			
6452087	Patrol	Initial Administration Fee	$140.00	
6452088	Patrol	Initial Administration Fee	$140.00	
6452089	Patrol	Initial Administration Fee	$140.00	

Quote	Driver	Description	Capitalized Price	Billed Price
6452090	Patrol	Initial Administration Fee	$140.00	
6452091	Patrol	Initial Administration Fee	$140.00	
6452092	Patrol	Initial Administration Fee	$140.00	
6452093	Patrol	Initial Administration Fee	$140.00	
6452094	Patrol	Initial Administration Fee	$140.00	
6452095	Patrol	Initial Administration Fee	$140.00	
		Total Other Costs	**$1,260.00**	**$0.00**

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Quantity: 9

VEHICLE INFORMATION:

2022 Tesla Model Y Long Range 4dr All-Wheel Drive Sport Utility - US
Series ID: MODELYLR

Pricing Summary:

	INVOICE	MSRP
Base Vehicle	$ 62,990.00	$ 62,990.00
Total Options	$ 4,700.00	$ 4,700.00
Destination Charge	$ 1,200.00	$ 1,200.00
Total Price	**$ 68,890.00**	**$ 68,890.00**

SELECTED COLOR:

Exterior:	SOLB - (0 P) Solid Black
Interior:	BLK - (0 I) Black w/Premium Seat Trim

SELECTED OPTIONS:

CODE	DESCRIPTION	INVOICE	MSRP
BLK_02	(0 I) Black w/Premium Seat Trim	NC	NC
DLR	Tesla Price Increase	$ 2,950.00	$ 2,950.00
FEE	Non-Refundable Order Fee	$ 250.00	$ 250.00
PAINT	Monotone Paint	STD	STD
SOLB_02	(0 P) Solid Black	$ 1,500.00	$ 1,500.00
STDAR	5 Seat Interior	STD	STD
STDAX	9.0 Axle Ratio	STD	STD
STDEN	Dual Motor: Fr AC Induction/Rr AC Permanent Magnet	STD	STD
STDGV	GVWR: 5,712 lbs	STD	STD
STDRD	Radio: Premium Audio System	STD	STD
STDTM	Premium Seat Trim	STD	STD
STDTN	Transmission: 1-Speed Automatic	STD	STD
STDTR	Tires: 255/45R19	STD	STD
STDWL	Wheels: 19" x 9.5" Gemini	STD	STD

CONFIGURED FEATURES:

Body Exterior Features:

- Number Of Doors 4
- Driver And Passenger Mirror: auto dimming power remote heated power folding side-view door mirrors with tilt down
- Skid Plates: skid plates
- Door Handles: black
- Front And Rear Bumpers: body-coloured front and rear bumpers
- Body Material: galvanized steel/aluminum body material
- Fender Flares: black fender flares
- Grille: black grille

Convenience Features:

- Air Conditioning automatic dual-zone front air conditioning
- Air Filter: air filter
- Console Ducts: console ducts
- Steering Wheel A/C Controls: steering-wheel mounted A/C controls
- Power Sunroof: front and rear fixed laminated glass sunroof
- Seat Memory: 5 driver memory seat settings (includes door mirrors, steering wheel,)
- Cruise Control: cruise control with steering wheel controls, Traffic-Aware Cruise Control distance pacing
- Trunk/Hatch/Door Remote Release: power cargo access remote release
- Power Windows: power windows with front and rear 1-touch down
- 1/4 Vent Rear Windows: power rearmost windows
- Remote Keyless Entry: keyfob and smart device-as-key remote keyless entry
- Illuminated Entry: illuminated entry
- Integrated Key Remote: integrated key/remote
- Auto Locking: auto-locking doors
- Passive Entry: proximity key
- Valet Key: valet function
- Trunk FOB Controls: keyfob trunk/hatch/door release
- Window FOB Controls: remote window controls
- Steering Wheel: heated steering wheel with power tilting, power telescoping, auto tilt-away
- Day-Night Rearview Mirror: day-night rearview mirror
- Auto-dimming Rearview Mirror: auto-dimming rearview mirror
- Driver and Passenger Vanity Mirror: illuminated auxiliary driver and passenger-side visor mirrors
- Navigation System: navigation system with voice activation
- Front Cupholder: front and rear cupholders
- Floor Console: full floor console with covered box
- Glove Box: illuminated locking glove box
- Driver Door Bin: driver and passenger door bins
- Rear Door Bins: rear door bins
- Seatback Storage Pockets: 2 seatback storage pockets
- IP Storage: covered bin instrument-panel storage
- Driver Footrest: driver's footrest
- Retained Accessory Power: retained accessory power
- Power Accessory Outlet: 1 12V DC power outlet

Entertainment Features:

- radio FM/HD with seek-scan
- Radio Data System: radio data system
- Amplifier: amplifier
- Voice Activated Radio: voice activated radio
- Steering Wheel Radio Controls: steering-wheel mounted audio controls
- Speakers: 14 speakers
- Internet Access: internet access
- 1st Row LCD: 1 1st row LCD monitor
- Wireless Connectivity: wireless phone connectivity
- Antenna: window grid antenna

Lighting, Visibility and Instrumentation Features:

- Headlamp Type delay-off aero-composite LED low/high beam headlamps
- Auto-levelling Headlights: auto-leveling headlights
- Auto-Dimming Headlights: auto high-beam headlights

Front Fog Lights: front fog lights
Front Wipers: variable intermittent wipers with heating wiper park
Rear Window Defroster: rear window defroster
Tinted Windows: light-tinted windows
Dome Light: dome light with fade
Front Reading Lights: front and rear reading lights
Door Curb/Courtesy Lights: 4 door curb/courtesy lights
Variable IP Lighting: variable instrument panel lighting
Display Type: digital appearance
Compass: compass
Exterior Temp: outside-temperature display
Low Tire Pressure Warning: tire specific low-tire-pressure warning
Park Distance Control: front and rear parking sensors
Trip Computer: trip computer
Trip Odometer: trip odometer
Lane Departure Warning: lane departure
Blind Spot Sensor: blind spot
Front Pedestrian Braking: pedestrian detection
Forward Collision Alert: forward collision
Clock: in-dash clock
Systems Monitor: systems monitor
Rear Vision Camera: rear vision camera
Battery Warning: battery warning
Lights On Warning: lights-on warning
Key in Ignition Warning: key-in-ignition warning
Door Ajar Warning: door-ajar warning
Trunk Ajar Warning: trunk-ajar warning
Brake Fluid Warning: brake-fluid warning

Safety And Security:

ABS four-wheel ABS brakes
Number of ABS Channels: 4 ABS channels
Brake Assistance: brake assist
Brake Type: four-wheel disc brakes
Vented Disc Brakes: front and rear ventilated disc brakes
Daytime Running Lights: daytime running lights
Driver Front Impact Airbag: driver and passenger front-impact airbags
Driver Side Airbag: seat-mounted driver and passenger side-impact airbags
Overhead Airbag: curtain 1st and 2nd row overhead airbag
Knee Airbag: knee airbag
Occupancy Sensor: front passenger airbag occupancy sensor
Height Adjustable Seatbelts: height adjustable front seatbelts
Seatbelt Pretensioners: front and rear seatbelt pre-tensioners
3Point Rear Centre Seatbelt: 3 point rear centre seatbelt
Side Impact Bars: side-impact bars
Perimeter Under Vehicle Lights: perimeter/approach lights
Tailgate/Rear Door Lock Type: tailgate/rear door lock included with power door locks
Rear Child Safety Locks: rear child safety locks
Ignition Disable: immobilizer
Security System: security system Sentry Mode with video recording
Tracker System: tracker system
Electronic Stability: electronic stability
Traction Control: ABS and driveline traction control
Front and Rear Headrests: fixed front head restraints
Rear Headrest Control: 2 rear head restraints
Break Resistant Glass: break resistant glass

Seats And Trim:

Seating Capacity max. seating capacity of 5
Front Bucket Seats: front bucket seats
Front Heated Cushion: driver and passenger heated-cushions
Front Heated Seatback: driver and passenger heated-seatbacks

Heated Rear Seat: heated rear seat
Number of Driver Seat Adjustments: 8-way driver and passenger seat adjustments
Reclining Driver Seat: power reclining driver and passenger seats
Driver Lumbar: power 4-way driver and passenger lumbar support
Driver Height Adjustment: power height-adjustable driver and passenger seats
Driver Fore/Aft: power driver and passenger fore/aft adjustment
Driver Cushion Tilt: power driver and passenger cushion tilt
Front Centre Armrest Storage: front centre armrest
Rear Seat Type: rear manual reclining 40-20-40 split-bench seat
Rear Folding Position: rear seat fold-forward seatback
Rear Seat Armrest: rear seat centre armrest
Leather Upholstery: leatherette front and rear seat upholstery
Door Trim Insert: simulated suede door panel trim
Headliner Material: full cloth headliner
Floor Covering: full carpet floor covering
Dashboard Console Insert, Door Panel Insert Combination: aluminum/genuine wood instrument panel insert, door panel insert, console insert
LeatherSteeringWheel: leatherette steering wheel
Floor Mats: carpet front and rear floor mats
Interior Accents: metal-look interior accents
Cargo Space Trim: carpet cargo space
Trunk Lid: plastic trunk lid/rear cargo door
Cargo Tie Downs: cargo tie-downs
Cargo Light: cargo light
Concealed Cargo Storage: concealed cargo storage

Standard Engine:
Engine (electric)

Standard Transmission:
Transmission 1-speed automatic

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Open-End (Equity) Lease Rate Quote

Quote No: 6451976

Prepared For: City of South Pasadena

Date 06/20/2022
AE/AM GH0/PND

Unit #
Year 2022 **Make** Tesla **Model** Model 3
Series Base 4dr Rear-Wheel Drive Sedan
Vehicle Order Type Ordered **Term** 60 **State** CA **Customer#** 547143

$ 58,499.00		Capitalized Price of Vehicle[1]
$ 0.00	*	Sales Tax 0.0000% **State** CA
$ 0.00	*	Initial License Fee
$ 0.00	*	Registration Fee
$ 465.00		Other: (See Page 2)
$ 12,998.50	*	Capitalized Price Reduction
$ 1,332.35	*	Tax on Capitalized Price Reduction
$ 6,970.00		Gain Applied From Prior Unit
$ 714.43	*	Tax on Gain On Prior
$ 0.00	*	Security Deposit
$ 0.00	*	Tax on Incentive (Taxable Incentive Total : $0.00)
$ 38,995.50		Total Capitalized Amount (Delivered Price)
$ 584.93		Depreciation Reserve @ 1.5000%
$ 197.15		Monthly Lease Charge (Based on Interest Rate - Subject to a Floor)[2]
$ 782.08		**Total Monthly Rental Excluding Additional Services**

All language and acknowledgments contained in the signed quote apply to all vehicles that are ordered under this signed quote.

Order Information

Driver Name	Cadet
Exterior Color	(0 P) Solid Black
Interior Color	(0 I) Black w/Premium Seat Trim
Lic. Plate Type	Unknown
GVWR	0

Additional Fleet Management

	Master Policy Enrollment Fees		
$ 0.00	Commercial Automobile Liability Enrollment		
	Liability Limit $0.00		
$ 0.00	Physical Damage Management	Comp/Coll Deductible	0 / 0
$ 0.00	Full Maintenance Program[3] Contract Miles 0	OverMileage Charge	$ 0.00 Per Mile
	Incl: # Brake Sets (1 set = 1 Axle) 0	# Tires 0	Loaner Vehicle Not Included
$ 0.00	**Additional Services SubTotal**		
$ 80.16	Sales Tax 10.2500%	**State** CA	
$ 862.24	**Total Monthly Rental Including Additional Services**		
$ 3,899.70	Reduced Book Value at 60 Months		
$ 400.00	Service Charge Due at Lease Termination		

Quote based on estimated annual mileage of 15,000
(Current market and vehicle conditions may also affect value of vehicle)
(Quote is Subject to Customer's Credit Approval)
Notes

Enterprise FM Trust will be the owner of the vehicle covered by this Quote. Enterprise FM Trust (not Enterprise Fleet Management) will be the Lessor of such vehicle under the Master Open - End (Equity) Lease Agreement and shall have all rights and obligations of the Lessor under the Master Open - End (Equity) Lease Agreement with respect to such vehicle.
Lessee must maintain insurance coverage on the vehicle as set forth in Section 11 of the Master Open-End (Equity) Lease Agreement until the vehicle is sold.

ALL TAX AND LICENSE FEES TO BE BILLED TO LESSEE AS THEY OCCUR.
Lessee hereby authorizes this vehicle order, agrees to lease the vehicle on the terms set forth herein and in the Master Equity Lease Agreement and agrees that Lessor shall have the right to collect damages in the event Lessee fails or refuses to accept delivery of the ordered vehicle. Lessee certifies that it intends that more than 50% of the use of the vehicle is to be in a trade or business of the Lessee.

LESSEE City of South Pasadena

BY **TITLE** **DATE**

* INDICATES ITEMS TO BE BILLED ON DELIVERY.

[1] Capitalized Price of Vehicle May be Adjusted to Reflect Final Manufacturer's Invoice. Lessee Hereby Assigns to Lessor anyManufacturer Rebates And/Or Manufacturer Incentives Intended for the Lessee, Which Rebates And/Or Incentives Have Been UsedBy Lessor to Reduce the Capitalized Price of the Vehicle.

[2] Monthly Lease Charge Will Be Adjusted to Reflect the Interest Rate on the Delivery Date (Subject to a Floor).

[3] The inclusion herein of references to maintenance fees/services are solely for the administrative convenience of Lessee. Notwithstanding the inclusion of such references in this [Invoice/Schedule/Quote], all such maintenance services are to be performed by Enterprise Fleet Management, Inc., and all such maintenance fees are payable by Lessee solely for the account of Enterprise Fleet Management, Inc., pursuant to that certain separate [Maintenance Agreement] entered into by and between Lessee and Enterprise Fleet Management, Inc.; provided that such maintenance fees are being billed by Enterprise FM Trust, and are payable at the direction of Enterprise FM Trust, solely as an authorized agent for collection on behalf of Enterprise Fleet Management, Inc.

Aftermarket Equipment Total

Description	(B)illed or (C)apped	Price
Lighting - Unplugged Quote #2544	C	$ 8,559.00
Total Aftermarket Equipment Billed		$ 0.00
Total Aftermarket Equipment Capitalized		$ 8,559.00
Aftermarket Equipment Total		$ 8,559.00

Other Totals

Description	(B)illed or (C)apped	Price
Initial Administration Fee	C	$ 140.00
Pricing Plan Delivery Charge	C	$ 125.00
Courtesy Delivery Fee	C	$ 200.00
Total Other Charges Billed		$ 0.00
Total Other Charges Capitalized		$ 465.00
Other Charges Total		$ 465.00

Open-End (Equity) Lease Rate Quote

Quote No: 6451976

VEHICLE INFORMATION:

2022 Tesla Model 3 Base 4dr Rear-Wheel Drive Sedan - US

Series ID: MODEL3SRP

Pricing Summary:

	INVOICE	MSRP
Base Vehicle	$46,990	$46,990.00
Total Options	$1,750.00	$1,750.00
Destination Charge	$1,200.00	$1,200.00
Total Price	**$49,940.00**	**$49,940.00**

SELECTED COLOR:

Exterior: SOLB-(0 P) Solid Black

Interior: BLK-(0 I) Black w/Premium Seat Trim

SELECTED OPTIONS:

CODE	DESCRIPTION	INVOICE	MSRP
BLK_02	(0 I) Black w/Premium Seat Trim	NC	NC
FEE	Non-Refundable Order Fee	$250.00	$250.00
PAINT	Monotone Paint	STD	STD
SOLB_02	(0 P) Solid Black	$1,500.00	$1,500.00
STDEN	Motor: AC Permanent Magnet	STD	STD
STDRD	Radio: Upgraded Audio System	STD	STD
STDST	Premium Heated Front Bucket Seats	STD	STD
STDTM	Premium Seat Trim	STD	STD
STDTN	Transmission: 1-Speed Automatic	STD	STD
STDTR	Tires: P235/45R18	STD	STD
STDWL	Wheels: 18" x 8.5" Aero	STD	STD

CONFIGURED FEATURES:

Body Exterior Features:

- Number Of Doors 4
- Rear Cargo Door Type: power open and close trunk
- Driver And Passenger Mirror: auto dimming power remote heated power folding side-view door mirrors with tilt down
- Skid Plates: skid plates
- Door Handles: black
- Front And Rear Bumpers: body-coloured front and rear bumpers
- Body Material: galvanized steel/aluminum body material

Convenience Features:

- Air Conditioning automatic dual-zone front air conditioning
- Air Filter: air filter
- Console Ducts: console ducts
- Steering Wheel A/C Controls: steering-wheel mounted A/C controls
- Power Sunroof: 1st row fixed laminated glass sunroof
- 2nd Row Sunroof: fixed laminated glass 2nd row sunroof
- Seat Memory: 3 driver memory seat settings (includes door mirrors, steering wheel,)
- Cruise Control: cruise control with steering wheel controls, Traffic-Aware Cruise Control distance pacing
- Trunk/Hatch/Door Remote Release: power cargo access remote release
- Power Windows: power windows with front and rear 1-touch down
- Remote Keyless Entry: smart device-as-key remote keyless entry
- Illuminated Entry: illuminated entry
- Integrated Key Remote: integrated key/remote
- Auto Locking: auto-locking doors
- Passive Entry: proximity key
- Valet Key: valet function
- Trunk FOB Controls: keyfob trunk/hatch/door release
- Window FOB Controls: remote window controls
- Steering Wheel: heated steering wheel with power tilting, power telescoping
- Day-Night Rearview Mirror: day-night rearview mirror
- Auto-dimming Rearview Mirror: auto-dimming rearview mirror
- Driver and Passenger Vanity Mirror: illuminated auxiliary driver and passenger-side visor mirrors
- Navigation System: navigation system with voice activation
- Front Cupholder: front and rear cupholders
- Floor Console: full floor console with covered box
- Glove Box: illuminated locking glove box
- Driver Door Bin: driver and passenger door bins
- Rear Door Bins: rear door bins
- Seatback Storage Pockets: 2 seatback storage pockets
- IP Storage: covered bin instrument-panel storage
- Driver Footrest: driver's footrest
- Retained Accessory Power: retained accessory power
- Power Accessory Outlet: 1 12V DC power outlet

Entertainment Features:

- radio FM/HD with seek-scan
- Radio Data System: radio data system
- Voice Activated Radio: voice activated radio
- Steering Wheel Radio Controls: steering-wheel mounted audio controls
- Speakers: 8 speakers
- Entertainment Centre: entertainment system with digital media
- Internet Access: internet access
- 1st Row LCD: 1 1st row LCD monitor
- Wireless Connectivity: wireless phone connectivity
- Antenna: window grid antenna

Lighting, Visibility and Instrumentation Features:

- Headlamp Type delay-off projector beam LED low/high beam headlamps
- Auto-levelling Headlights: auto-leveling headlights

Auto-Dimming Headlights: auto high-beam headlights
Front Wipers: variable intermittent wipers with heating wiper park
Rear Window Defroster: rear window defroster
Tinted Windows: light-tinted windows
Dome Light: dome light with fade
Front Reading Lights: front and rear reading lights
Door Curb/Courtesy Lights: 4 door curb/courtesy lights
Variable IP Lighting: variable instrument panel lighting
Display Type: digital appearance
Compass: compass
Exterior Temp: outside-temperature display
Low Tire Pressure Warning: tire specific low-tire-pressure warning
Park Distance Control: front and rear parking sensors
Trip Computer: trip computer
Trip Odometer: trip odometer
Lane Departure Warning: lane departure
Blind Spot Sensor: blind spot
Front Pedestrian Braking: pedestrian detection
Forward Collision Alert: forward collision
Clock: in-dash clock
Systems Monitor: systems monitor
Rear Vision Camera: rear vision camera
Battery Warning: battery warning
Lights On Warning: lights-on warning
Key in Ignition Warning: key-in-ignition warning
Door Ajar Warning: door-ajar warning
Trunk Ajar Warning: trunk-ajar warning
Brake Fluid Warning: brake-fluid warning

Safety And Security:

ABS four-wheel ABS brakes
Number of ABS Channels: 4 ABS channels
Brake Assistance: brake assist
Brake Type: four-wheel disc brakes
Vented Disc Brakes: front and rear ventilated disc brakes
Daytime Running Lights: daytime running lights
Driver Front Impact Airbag: driver and passenger front-impact airbags
Driver Side Airbag: seat-mounted driver and passenger side-impact airbags
Overhead Airbag: curtain 1st and 2nd row overhead airbag
Knee Airbag: knee airbag
Occupancy Sensor: front passenger airbag occupancy sensor
Height Adjustable Seatbelts: height adjustable front seatbelts
Seatbelt Pretensioners: front and rear seatbelt pre-tensioners
3Point Rear Centre Seatbelt: 3 point rear centre seatbelt
Side Impact Bars: side-impact bars
Perimeter Under Vehicle Lights: perimeter/approach lights
Tailgate/Rear Door Lock Type: tailgate/rear door lock included with power door locks
Rear Child Safety Locks: rear child safety locks
Ignition Disable: immobilizer
Security System: security system with video recording
Tracker System: tracker system
Electronic Stability: electronic stability
Traction Control: ABS and driveline traction control
Front and Rear Headrests: fixed front head restraints
Rear Headrest Control: 2 rear head restraints
Break Resistant Glass: break resistant glass

Seats And Trim:

Seating Capacity max. seating capacity of 5
Front Bucket Seats: front bucket seats
Front Heated Cushion: driver and passenger heated-cushions

Front Heated Seatback: driver and passenger heated-seatbacks
Heated Rear Seat: heated rear seat
Number of Driver Seat Adjustments: 8-way driver and passenger seat adjustments
Reclining Driver Seat: power reclining driver and passenger seats
Driver Lumbar: power 4-way driver and passenger lumbar support
Driver Height Adjustment: power height-adjustable driver and passenger seats
Driver Fore/Aft: power driver and passenger fore/aft adjustment
Driver Cushion Tilt: power driver and passenger cushion tilt
Front Centre Armrest Storage: front centre armrest
Rear Seat Type: rear 60-40 bench seat
Rear Folding Position: rear seat fold-forward seatback
Rear Seat Armrest: rear seat centre armrest
Leather Upholstery: leatherette front and rear seat upholstery
Door Trim Insert: simulated suede door panel trim
Headliner Material: full cloth headliner
Floor Covering: full carpet floor covering
Dashboard Console Insert, Door Panel Insert Combination: aluminum/genuine wood instrument panel insert, door panel insert, console insert
LeatherSteeringWheel: leatherette steering wheel
Interior Accents: metal-look interior accents
Cargo Space Trim: carpet cargo space
Trunk Lid: plastic trunk lid/rear cargo door
Cargo Light: cargo light
Concealed Cargo Storage: concealed cargo storage

Standard Engine:

Engine (electric)

Standard Transmission:

Transmission 1-speed automatic

enterprise | FLEET MANAGEMENT

Open-End (Equity) Lease Rate Quote

Quote No: 6452064

Prepared For: City of South Pasadena

Date 06/21/2022

AE/AM GH0/PND

Unit #

Year 2022 **Make** Tesla **Model** Model Y

Series Long Range 4dr All-Wheel Drive Sport Utility

Vehicle Order Type Ordered **Term** 60 **State** CA **Customer#** 547143

$ 112,356.00		Capitalized Price of Vehicle[1]
$ 0.00	*	Sales Tax 0.0000% **State** CA
$ 0.00	*	Initial License Fee
$ 0.00	*	Registration Fee
$ 465.00		Other: (See Page 2)
$ 26,462.75	*	Capitalized Price Reduction
$ 2,712.43	*	Tax on Capitalized Price Reduction
$ 6,970.00		Gain Applied From Prior Unit
$ 714.43	*	Tax on Gain On Prior
$ 0.00	*	Security Deposit
$ 0.00	*	Tax on Incentive (Taxable Incentive Total : $0.00)
$ 79,388.25		Total Capitalized Amount (Delivered Price)
$ 1,190.82		Depreciation Reserve @ 1.5000%
$ 390.32		Monthly Lease Charge (Based on Interest Rate - Subject to a Floor)[2]
$ 1,581.14		**Total Monthly Rental Excluding Additional Services**

All language and acknowledgments contained in the signed quote apply to all vehicles that are ordered under this signed quote.

Order Information

Driver Name	K9
Exterior Color	(0 P) Solid Black
Interior Color	(0 I) Black w/Premium Seat Trim
Lic. Plate Type	Unknown
GVWR	0

	Additional Fleet Management		
	Master Policy Enrollment Fees		
$ 0.00	Commercial Automobile Liability Enrollment		
	Liability Limit $0.00		
$ 0.00	Physical Damage Management	Comp/Coll Deductible	0 / 0
$ 0.00	Full Maintenance Program[3] Contract Miles 0	OverMileage Charge	$ 0.00 Per Mile
	Incl: # Brake Sets (1 set = 1 Axle) 0	# Tires 0	Loaner Vehicle Not Included
$ 0.00	**Additional Services SubTotal**		
$ 162.07	Sales Tax 10.2500%	**State** CA	
$ 1,743.21	**Total Monthly Rental Including Additional Services**		
$ 7,939.05	Reduced Book Value at 60 Months		
$ 400.00	Service Charge Due at Lease Termination		

Quote based on estimated annual mileage of 15,000
(Current market and vehicle conditions may also affect value of vehicle)
(Quote is Subject to Customer's Credit Approval)
Notes

Enterprise FM Trust will be the owner of the vehicle covered by this Quote. Enterprise FM Trust (not Enterprise Fleet Management) will be the Lessor of such vehicle under the Master Open - End (Equity) Lease Agreement and shall have all rights and obligations of the Lessor under the Master Open - End (Equity) Lease Agreement with respect to such vehicle.
Lessee must maintain insurance coverage on the vehicle as set forth in Section 11 of the Master Open-End (Equity) Lease Agreement until the vehicle is sold.

ALL TAX AND LICENSE FEES TO BE BILLED TO LESSEE AS THEY OCCUR.

Lessee hereby authorizes this vehicle order, agrees to lease the vehicle on the terms set forth herein and in the Master Equity Lease Agreement and agrees that Lessor shall have the right to collect damages in the event Lessee fails or refuses to accept delivery of the ordered vehicle. Lessee certifies that it intends that more than 50% of the use of the vehicle is to be in a trade or business of the Lessee.

LESSEE City of South Pasadena

BY **TITLE** **DATE**

* INDICATES ITEMS TO BE BILLED ON DELIVERY.

[1] Capitalized Price of Vehicle May be Adjusted to Reflect Final Manufacturer's Invoice. Lessee Hereby Assigns to Lessor anyManufacturer Rebates And/Or Manufacturer Incentives Intended for the Lessee, Which Rebates And/Or Incentives Have Been UsedBy Lessor to Reduce the Capitalized Price of the Vehicle.

[2] Monthly Lease Charge Will Be Adjusted to Reflect the Interest Rate on the Delivery Date (Subject to a Floor).

[3] The inclusion herein of references to maintenance fees/services are solely for the administrative convenience of Lessee. Notwithstanding the inclusion of such references in this [Invoice/Schedule/Quote], all such maintenance services are to be performed by Enterprise Fleet Management, Inc., and all such maintenance fees are payable by Lessee solely for the account of Enterprise Fleet Management, Inc., pursuant to that certain separate [Maintenance Agreement] entered into by and between Lessee and Enterprise Fleet Management, Inc.; provided that such maintenance fees are being billed by Enterprise FM Trust, and are payable at the direction of Enterprise FM Trust, solely as an authorized agent for collection on behalf of Enterprise Fleet Management, Inc.

Aftermarket Equipment Total

Description	(B)illed or (C)apped	Price
K-9 Cooling Fan - Unplugged Quote #2542	C	$ 43,466.00
Total Aftermarket Equipment Billed		$ 0.00
Total Aftermarket Equipment Capitalized		$ 43,466.00
Aftermarket Equipment Total		$ 43,466.00

Other Totals

Description	(B)illed or (C)apped	Price
Initial Administration Fee	C	$ 140.00
Pricing Plan Delivery Charge	C	$ 125.00
Courtesy Delivery Fee	C	$ 200.00
Total Other Charges Billed		$ 0.00
Total Other Charges Capitalized		$ 465.00
Other Charges Total		$ 465.00

Open-End (Equity) Lease Rate Quote

Quote No: 6452064

VEHICLE INFORMATION:

2022 Tesla Model Y Long Range 4dr All-Wheel Drive Sport Utility - US

Series ID: MODELYLR

Pricing Summary:

	INVOICE	MSRP
Base Vehicle	$62,990	$62,990.00
Total Options	$4,700.00	$4,700.00
Destination Charge	$1,200.00	$1,200.00
Total Price	**$68,890.00**	**$68,890.00**

SELECTED COLOR:

Exterior: SOLB-(0 P) Solid Black

Interior: BLK-(0 I) Black w/Premium Seat Trim

SELECTED OPTIONS:

CODE	DESCRIPTION	INVOICE	MSRP
BLK_02	(0 I) Black w/Premium Seat Trim	NC	NC
DLR	Tesla Price Increase	$2,950.00	$2,950.00
FEE	Non-Refundable Order Fee	$250.00	$250.00
PAINT	Monotone Paint	STD	STD
SOLB_02	(0 P) Solid Black	$1,500.00	$1,500.00
STDAR	5 Seat Interior	STD	STD
STDAX	9.0 Axle Ratio	STD	STD
STDEN	Dual Motor: Fr AC Induction/Rr AC Permanent Magnet	STD	STD
STDGV	GVWR: 5,712 lbs	STD	STD
STDRD	Radio: Premium Audio System	STD	STD
STDTM	Premium Seat Trim	STD	STD
STDTN	Transmission: 1-Speed Automatic	STD	STD
STDTR	Tires: 255/45R19	STD	STD
STDWL	Wheels: 19" x 9.5" Gemini	STD	STD

CONFIGURED FEATURES:

Body Exterior Features:

- Number Of Doors 4
- Driver And Passenger Mirror: auto dimming power remote heated power folding side-view door mirrors with tilt down
- Skid Plates: skid plates
- Door Handles: black
- Front And Rear Bumpers: body-coloured front and rear bumpers
- Body Material: galvanized steel/aluminum body material
- Fender Flares: black fender flares
- Grille: black grille

Convenience Features:

- Air Conditioning automatic dual-zone front air conditioning
- Air Filter: air filter
- Console Ducts: console ducts
- Steering Wheel A/C Controls: steering-wheel mounted A/C controls
- Power Sunroof: front and rear fixed laminated glass sunroof
- Seat Memory: 5 driver memory seat settings (includes door mirrors, steering wheel,)
- Cruise Control: cruise control with steering wheel controls, Traffic-Aware Cruise Control distance pacing
- Trunk/Hatch/Door Remote Release: power cargo access remote release
- Power Windows: power windows with front and rear 1-touch down
- 1/4 Vent Rear Windows: power rearmost windows
- Remote Keyless Entry: keyfob and smart device-as-key remote keyless entry
- Illuminated Entry: illuminated entry
- Integrated Key Remote: integrated key/remote
- Auto Locking: auto-locking doors
- Passive Entry: proximity key
- Valet Key: valet function
- Trunk FOB Controls: keyfob trunk/hatch/door release
- Window FOB Controls: remote window controls
- Steering Wheel: heated steering wheel with power tilting, power telescoping, auto tilt-away
- Day-Night Rearview Mirror: day-night rearview mirror
- Auto-dimming Rearview Mirror: auto-dimming rearview mirror
- Driver and Passenger Vanity Mirror: illuminated auxiliary driver and passenger-side visor mirrors
- Navigation System: navigation system with voice activation
- Front Cupholder: front and rear cupholders
- Floor Console: full floor console with covered box
- Glove Box: illuminated locking glove box
- Driver Door Bin: driver and passenger door bins
- Rear Door Bins: rear door bins
- Seatback Storage Pockets: 2 seatback storage pockets
- IP Storage: covered bin instrument-panel storage
- Driver Footrest: driver's footrest
- Retained Accessory Power: retained accessory power
- Power Accessory Outlet: 1 12V DC power outlet

Entertainment Features:

- radio FM/HD with seek-scan
- Radio Data System: radio data system
- Amplifier: amplifier
- Voice Activated Radio: voice activated radio
- Steering Wheel Radio Controls: steering-wheel mounted audio controls
- Speakers: 14 speakers
- Internet Access: internet access
- 1st Row LCD: 1 1st row LCD monitor
- Wireless Connectivity: wireless phone connectivity
- Antenna: window grid antenna

Lighting, Visibility and Instrumentation Features:

- Headlamp Type delay-off aero-composite LED low/high beam headlamps

Auto-levelling Headlights: auto-leveling headlights
Auto-Dimming Headlights: auto high-beam headlights
Front Fog Lights: front fog lights
Front Wipers: variable intermittent wipers with heating wiper park
Rear Window Defroster: rear window defroster
Tinted Windows: light-tinted windows
Dome Light: dome light with fade
Front Reading Lights: front and rear reading lights
Door Curb/Courtesy Lights: 4 door curb/courtesy lights
Variable IP Lighting: variable instrument panel lighting
Display Type: digital appearance
Compass: compass
Exterior Temp: outside-temperature display
Low Tire Pressure Warning: tire specific low-tire-pressure warning
Park Distance Control: front and rear parking sensors
Trip Computer: trip computer
Trip Odometer: trip odometer
Lane Departure Warning: lane departure
Blind Spot Sensor: blind spot
Front Pedestrian Braking: pedestrian detection
Forward Collision Alert: forward collision
Clock: in-dash clock
Systems Monitor: systems monitor
Rear Vision Camera: rear vision camera
Battery Warning: battery warning
Lights On Warning: lights-on warning
Key in Ignition Warning: key-in-ignition warning
Door Ajar Warning: door-ajar warning
Trunk Ajar Warning: trunk-ajar warning
Brake Fluid Warning: brake-fluid warning

Safety And Security:

ABS four-wheel ABS brakes
Number of ABS Channels: 4 ABS channels
Brake Assistance: brake assist
Brake Type: four-wheel disc brakes
Vented Disc Brakes: front and rear ventilated disc brakes
Daytime Running Lights: daytime running lights
Driver Front Impact Airbag: driver and passenger front-impact airbags
Driver Side Airbag: seat-mounted driver and passenger side-impact airbags
Overhead Airbag: curtain 1st and 2nd row overhead airbag
Knee Airbag: knee airbag
Occupancy Sensor: front passenger airbag occupancy sensor
Height Adjustable Seatbelts: height adjustable front seatbelts
Seatbelt Pretensioners: front and rear seatbelt pre-tensioners
3Point Rear Centre Seatbelt: 3 point rear centre seatbelt
Side Impact Bars: side-impact bars
Perimeter Under Vehicle Lights: perimeter/approach lights
Tailgate/Rear Door Lock Type: tailgate/rear door lock included with power door locks
Rear Child Safety Locks: rear child safety locks
Ignition Disable: immobilizer
Security System: security system Sentry Mode with video recording
Tracker System: tracker system
Electronic Stability: electronic stability
Traction Control: ABS and driveline traction control
Front and Rear Headrests: fixed front head restraints
Rear Headrest Control: 2 rear head restraints
Break Resistant Glass: break resistant glass

Seats And Trim:

Seating Capacity max. seating capacity of 5

Front Bucket Seats: front bucket seats
Front Heated Cushion: driver and passenger heated-cushions
Front Heated Seatback: driver and passenger heated-seatbacks
Heated Rear Seat: heated rear seat
Number of Driver Seat Adjustments: 8-way driver and passenger seat adjustments
Reclining Driver Seat: power reclining driver and passenger seats
Driver Lumbar: power 4-way driver and passenger lumbar support
Driver Height Adjustment: power height-adjustable driver and passenger seats
Driver Fore/Aft: power driver and passenger fore/aft adjustment
Driver Cushion Tilt: power driver and passenger cushion tilt
Front Centre Armrest Storage: front centre armrest
Rear Seat Type: rear manual reclining 40-20-40 split-bench seat
Rear Folding Position: rear seat fold-forward seatback
Rear Seat Armrest: rear seat centre armrest
Leather Upholstery: leatherette front and rear seat upholstery
Door Trim Insert: simulated suede door panel trim
Headliner Material: full cloth headliner
Floor Covering: full carpet floor covering
Dashboard Console Insert, Door Panel Insert Combination: aluminum/genuine wood instrument panel insert, door panel insert, console insert
LeatherSteeringWheel: leatherette steering wheel
Floor Mats: carpet front and rear floor mats
Interior Accents: metal-look interior accents
Cargo Space Trim: carpet cargo space
Trunk Lid: plastic trunk lid/rear cargo door
Cargo Tie Downs: cargo tie-downs
Cargo Light: cargo light
Concealed Cargo Storage: concealed cargo storage

Standard Engine:

Engine (electric)

Standard Transmission:

Transmission 1-speed automatic

City Council Agenda Report

ITEM NO. 28

DATE: July 20, 2022

FROM: Arminé Chaparyan, City Manager

PREPARED BY: H. Ted Gerber, Director of Public Works

SUBJECT: **Award of a Contract for Waste Consultant Services in Support of Amending Exclusive Refuse Service Agreement**

Recommendation

It is recommended that the City Council award a contract with a consultant to assist the City in amending its current exclusive refuse service agreement with Athens Services as well as to assist the City in negotiating rates with its current exclusive refuse waste hauler.

Background

The City has an exclusive refuse service agreement with Arakelian Enterprises, Inc. dba Athens Services, to manage refuse, recycling, and street sweeping service. The agreement will be required to be amended in order for the City to comply with recent California State organic waste diversion requirements under Senate Bill 1383 (SB 1383). Consulting services are necessary to assist with the amendments to the Athens agreement that will be forthcoming due to City-desired service adjustments and regulatory requirements, such as SB 1383.

Analysis

The current waste hauler services agreement will need to be amended to include new services related to SB 1383 requirements. The amendment also offers an opportunity for the City to evaluate other aspects of the agreement that could be improved. The amendments are beyond the technical expertise of City staff, and the need for a consultant to assist staff in this process has been identified.

The City of South Pasadena Public Works Department solicited proposals from qualified professional services firms experienced in refuse and waste/wastehauling consultant services, through a request for proposals (RFP) posted on the PlanetBids website on June 20, 2022. Proposals were received through July 8, 2022 from the following firms:

- MSW Consultants
- MuniEnvironmental, LLC

South Pasadena Municipal Code section 2.99-29 addresses professional services as follows:

> (12) Professional and Contractual Services. Contracts for services of specially trained and professional persons or businesses shall be exempt from bidding. If possible, quotes from three qualified vendors shall be obtained prior to the award of a contract. If the contract is equal to or below twenty-five thousand dollars, the contract shall require the approval of, and be executed by, the city manager. All contracts exceeding twenty-five thousand dollars must be approved by the city council

Staff is currently evaluating the proposals to determine the most qualified consultant to assist the City in amending its current exclusive refuse service agreement. This review shall be completed prior to the July 20, 2022 City Council meeting, and a recommendation will be posted as an amendment to this report.

The scope of work for the consulting services includes reviewing documents, analyzing contracts, reviewing rates and fees, evaluating other City agreements, providing recommendations, assisting in negotiations, analyzing cost-benefits, calculating and deriving regulatory requirements, developing agreement language, attending negotiations sessions, attending/presenting at City Council meetings, and other related tasks.

Fiscal Impact
The Public Works Environmental Services Professional Services Account No. 101-6010-6015-8020-000 contains $75,000 appropriated for services related to the implementation of the Climate Action Plan and Green Action Plan, and state, county, and local mandates such as Organic Waste Recycling requirements. The sufficiency of this budget will be evaluated when staff finalize the negotiated fee with the selected Consultant. Any costs above the available funds in the Environmental Services Professional Services Account will need to be appropriated from the General Fund.

Attachment:
1. Draft Professional Services Agreement- To Be Posted as an Additional Document before the July 20, 2022 City Council meeting

ATTACHMENT 1
Request for Proposals

CITY OF SOUTH PASADENA

REQUEST FOR PROPOSALS (RFP)

REFUSE & WASTE CONSULTANT SERVICES

FY 2022-2023

JUNE 20, 2022

CITY OF SOUTH PASADENA

PUBLIC WORKS DEPARTMENT

1414 MISSION STREET

SOUTH PASADENA, CALIFORNIA 91030

PROPOSALS DUE: JULY 8, 2022, AT 5:00 PM

I. INTRODUCTION

The City of South Pasadena, Public Works Department is seeking proposals from qualified professional services firms experienced in refuse and waste/wastehauling consultant services.

II. CITY PROFILE

The City of South Pasadena (City) is located approximately six miles northeast of downtown Los Angeles, on the west side of the San Gabriel Valley between the cities of Pasadena, San Marino, Los Angeles, and Alhambra. Founded in 1874 by Indiana Colony, the City encompasses 3.44 square miles and was incorporated as a General Law city of the State of California on March 2, 1888. With a population of approximately 26,000, the City is known for its beautiful, historically significant homes on tree-lined streets, for its excellent public schools, and for a small-town atmosphere in the midst of greater Los Angeles.

The City provides a full range of services, including police and fire protection; public infrastructure, street, traffic signal, and lighting maintenance; sewer and water utility services; refuse collection; public improvements; recreational, library, cultural events, and parks; and planning and community development services.

III. BACKGROUND / PROJECT DESCRIPTION

The City of South Pasadena's Public Works Department is inviting qualified consultants to submit a proposal for professional services to assist the City in amending its current exclusive refuse service agreement, and assist the City in negotiating rates with its current exclusive refuse wastehauler, considering desired service adjustments and regulatory requirements, such as SB 1383. The City has an exclusive refuse service agreement with Arakelian Enterprises, Inc. dba Athens Services to manage refuse, recycling and street sweeping service.

IV. SCOPE OF SERVICES

The scope of work that firms will include as a minimum in the proposal shall consist of, but not be limited to, the following tasks. The proposers are encouraged to add to these tasks as deemed necessary. All tasks shall be completed within six (6) weeks of the project's notice to proceed.

(1) Receive and review from the City, pertinent project related information for the City's existing Exclusive Refuse Service Agreement, including the contract, amendment, contractual rate increases, municipal code and ordinances, and documents related to contract negotiations. Documents provided that are related to contract negotiations may be confidential in nature, and the consultant is required to control and store these documents as required by the City.

(2) Analyze the City's existing exclusive refuse service agreement and amendment. Review current and proposed contract terms and conditions, and identify opportunities to enhance or expand services considering cost-benefit.

(3) Review City's current rate calculation, franchise and related fees, annual increase methodology and compare to current industry best practices.

(4) Evaluate refuse service agreements with at least four (4) Southern California cities, preferably in Los Angeles County, that utilize South Pasadena's current exclusive refuse wastehauler. The identified cities shall be comparable to South Pasadena based on the type of services provided, similar population, demographics, and geographical considerations. Compare South Pasadena's existing services, rates, and fees, as well as proposed services, rates, and fees with those cities. The comparison between South Pasadena and the identified cities shall be developed for similar level of services with franchise, adjusting values as necessary to account for varying factors; e.g. regional variations in tipping fees. The comparison between South Pasadena and the identified cities jurisdictions shall consider service offerings, exclusions, rate calculation, franchise and related fees, and annual increase methodology.

(5) Provide a recommendation on modifications to the City's service offerings, exclusions, rate calculation, franchise and related fees, and annual increase methodology based on the comparison between South Pasadena and the identified cities jurisdictions. Any other relevant variables should be taken into account and incorporated in the analysis.

(6) Utilize the above analysis to assist the City in negotiating revised services and rates with the City's current exclusive refuse service wastehauler that incorporate regulatory requirements, e.g. AB 341, AB 1826, AB 1594, & SB 1383, and any modifications introduced by the City and the wastehauler in the negotiations.

(7) Assist the City in analyzing the cost-benefit of proposed revised rates from the City's current exclusive refuse services wastehauler, considering factors such as: modified service offerings, modified agreement terms, conversion to sustainable vehicles, provision of receptacles, regulatory requirements, and other factors as identified. Rate calculation methodologies shall be simplified to the extent possible, and structured to modify rates annually according to changes in the specific consumer price index (CPI) and changes in organics and recycling costs.

(8) Under SB 1383 requirements, calculate the quantity of organic products the City must purchase, and evaluate the current use of applicable recycled organic waste products in the City and by the City's current exclusive refuse wastehauler (e.g. compost, renewable fuel for transportation, etc.). Identify the gap between current use and the procurement targets, provide the procurement ratio for each type of organic waste product, and determine the most feasible combination of purchases to achieve compliance. Provide recommendations on how to achieve compliance with the procurement requirements.

(9) Recommend modifications to services based on current industry practices, findings from the evaluation of comparable cities, and negotiations with the City's current exclusive refuse wastehauler. Provide an estimate of fair rates and fees for the current and proposed levels of residential and commercial services. Compare recommended fees with current fees for all sectors/services and show percent change for each service. Include organics collection service and minimize abrupt rate changes, where feasible, for any single sector or service. Include the impacts of compliance with AB 341, AB 1826, AB 1594 and SB 1383 mandates on customer costs and revenue streams.

(10) Develop proposed performance clauses to be used in an amended exclusive refuse services agreement, and proposed rate structures that add SB 1383 organics diversion and related services, including waste characterization, outreach/education, monitoring, data management, reporting, and SB 1383 procurement requirement provision.

(11) Assist in two (2) onsite rate negotiation sessions with the City's current exclusive refuse wastehauler. An hourly rate cost quote shall be provided for one or more additional onsite or teleconference negotiation meetings.

(12) Meet with City Council in up to two (2) evening study sessions and/or City Council meeting to present information and explain findings.

(13) Consultant shall be responsible for providing all equipment, personnel, materials, and resources necessary to accurately perform all deliverables described herein. Consultant shall comply with all standard government accounting practices and industry best practices.

V. TERM OF AGREEMENT

The term of the agreement shall be until December 31, 2022.

VI. PROPOSAL REQUIREMENTS

The proposal must include the following information:

1. COVER LETTER: Include the name, address, telephone number, and email address of the consulting firm. The name and email address of the firm's authorized contract signatory. The name, email address, and telephone number of the firm's individual consultant proposed to be assigned to the City.
2. BACKGROUND: Describe your firm's background, experience, and project qualifications in providing the requested services. Include a list of agencies or consulting firms to which you have provided similar services.
3. STAFF'S EXPERIENCE & AVAILABILITY: Provide resumes describing the qualifications of the staff that will be available and working on this project. Provide a list of

similar projects and clients that your proposed Project Manager and Project Engineer have completed work for in the past 5 years.

4. SUB-CONSULTANT'S EXPERIENCE & AVAILABILITY: Provide a list of all proposed sub consultants that will be available and working on these projects, their background and qualifications, and degree of involvement.
5. PROJECT CONTROLS: Describe your firm's ability to control costs and provide accurate and timely invoices; to monitor and stay within budget, to monitor schedule and review times and describe the techniques used to complete tasks within the proposed time frames.
6. REFERENCES: Provide a minimum of three (3) references the City may contact concerning your performance on other similar tasks/projects, preferably in the Southern California area. Include a brief description of the work provided for each reference. The references should include the start date of the contract and the date of completion for each contract.
6. ACCEPTANCE STATEMENT: Submit a signed statement that the firm accepts all the terms and conditions outlined in the City's standard professional services agreement (attached) and can meet all insurance requirements made part of the agreement unless otherwise stated in the proposal exceptions.
7. PROPOSAL EXCEPTIONS: The proposer must identify any and all exceptions to the terms and conditions in the RFP process (inclusive of the standard professional services agreement, insurance, etc.) and identify the firm's proposed specific changes for consideration by the City. By submitting a proposal, your firm acknowledges and accepts all terms and conditions in this RFP process, including all addendum, amendments, or supplements; unless otherwise explicitly stated in the exceptions.
8. FEE PROPOSAL/SCHEDULE: Submit in a separate sealed envelope for the tasks involved, indexed per task. Provide an hourly rate fee schedule applicable to all staff proposed. Also, include overtime hourly rates, mileage costs and pricing for any additional billing requirements (such as production fees, etc.), if applicable.

VII. EVALUATION OF PROPOSALS

To be considered responsive, proposers must respond to this solicitation according to the requirements, specifications, commercial terms, and provisions as described and set forth herein. Proposals must embrace a concept that the successful proposer will satisfy all of the objectives and service specifications most cost-effectively and efficiently possible as outlined in this document. The City reserves the right to make such alterations, deviations, additions to or deletions, or in any combination to the proposed RFP. The City may award the tasks in any combination.

All proposals will be reviewed based on the firm's ability to provide services that meet the requirements outlined in this RFP, as well as the company's responsiveness, qualifications, past experience, and fee. The City reserves the right to make such investigations, as it deems

necessary to determine the proposer's ability to provide services meeting a satisfactory level of performance in accordance with the City's requirements.

By submitting a proposal, each proposer represents and warrants the following:

- All terms and conditions as presented in this RFP process are acknowledged and accepted, unless otherwise explicitly stated in the proposal;
- The proposer has not in any manner sought collusion to secure any improper advantage over any other person submitting a proposal; and
- The proposer has not, and will not, offer any City employee any gratuity, discount, or offer of employment connected with the award of a contract by City.

Interviews and presentations by one, several, or all of the proposers may be requested by the City if deemed necessary to understand and compare the proposer's capabilities and qualifications fully. The adequacy, depth, and clarity of the proposal will influence its evaluation to a considerable degree.

VIII. SUBMISSION PROCEDURES

A. RFP QUESTIONS

All questions regarding this RFP shall be submitted by **5:00 PM on July 1, 2022,** to the Online Q&A Section on Plant Bids. The City reserves the right to respond to any or none of the questions, depending on their merit.

B. CONTRACT AWARD SCHEDULE

The tentative schedule for consultant selection and agreement award is provided below. The City reserves the right to make changes to the schedule, as deemed beneficial to the City's interest.

RFP Issuance:	June 20, 2022
Proposals Due:	July 8, 2022
Consultant Interview (if any)	To Be Determined
Agreement Award	To Be Determined

C. PROPOSAL SUBMISSION

All proposals must be submitted no later than **5:00 PM on July 8, 2022**. Proposals received after the deadline will not be considered.

Proposals shall be submitted electronically to Planet Bids. Submit all fees and cost proposals in an electronically sealed envelope on Planet Bids. A link to the Planet Bids system is available on the City's website at the following location:

https://www.southpasadenaca.gov/government/city-clerk/request-for-proposals

The submittal package shall include all required information and documents as stated herein**.** Submission of a proposal shall constitute acknowledgment and acceptance of all terms and conditions contained in this RFP, including all exhibits, attachments, and any amendments or addendum issued by the City.

IX. ATTACHMENTS

A. Sample Professional Services Agreement

ATTACHMENT 2
Professional Services Agreement

To be submitted as an Additional Document

City Council Agenda Report

ITEM NO. 29

DATE: July 20, 2022

FROM: Arminé Chaparyan, City Manager

PREPARED BY: Tamara Binns, Assistant to the City Manager
Shannon Robledo, Police Lieutenant

SUBJECT: **Approval of Mobile Crisis Pilot Program Agreement Letter**

Recommendation
It is recommended that the City Council approve the San Gabriel Valley Council of Government (SGVCOG) Mobile Crisis Pilot Program Agreement Letter, in coordination with the adopted 2022 Legislative Platform.

Background
On July 13, 2021, the Los Angeles County Board of Supervisors (BOS) approved the Fiscal Year (FY) 2021-2022 Measure H Funding Recommendations. These recommendations included funding to be allocated to each subregion in Los Angeles based on the 2020 point-in-time (PIT) homeless count. In our subregion, the San Gabriel Valley Council of Governments (SGVCOG), is scheduled to receive a total of $3.525 million to support programs in the San Gabriel Valley for the period of January 2022 to June 2023, and all funding must be expended by June 30, 2023.

In the Summer of 2021, SGVCOG conducted outreach to its member agencies to identify the region's biggest priorities and gaps in the homeless services system. One of the gaps identified was the need for a more immediate response to those experiencing a crisis. Currently, in many communities, law enforcement is the first responder for persons experiencing homelessness and mental health crises. In August 2021, the SGVCOG Board allocated funding to establish a mobile crisis response program in the San Gabriel Valley to provide an alternative response for law enforcement. The program's intent is to establish a regional or a sub-regional program that can maximize the reach of funding and services.

In the Fall of 2021, the SGVCOG released an application to identify which cities might be interested in participating in a regional Mobile Crisis Response Pilot Program. This Program would establish alternative mobile crisis teams to respond to non-violent service calls, including persons experiencing homelessness and those experiencing a mental health crisis. This approach alleviates the burden on law enforcement to respond to these types of calls, and provides social service and mental health professionals to more appropriately respond to these calls for service.

To identify participating cities, cities were asked to submit data indicating the volume and type of calls for which the cities might be seeking an alternative response and informed that additional funding may be required from the cities for participation. Given the short turnaround for expending the funds, cities were also informed that buy-in from the City, including community members, City Council, and law enforcement was required, to participate in the pilot program. Based on responses from the cities, SGVCOG staff determined that it was most appropriate to move forward with a pilot program to establish and evaluate the future of this effort.

Discussion
Given the City's strong interest and engagement in launching the program, South Pasadena was included as a participating city in the pilot program. Over the last several months, City staff has participated in a working group to establish the parameters of the initial pilot program. The initial pilot program will include one mobile crisis team consisting of the following two members: a mental health clinician and a peer support specialist. The mobile crisis team for the pilot team will be provided by Los Angeles Centers for Alcohol and Drug Abuse (LACADA) in a contract managed by the SGVCOG.

The Mobile Crisis Team will serve the participating cohort cities, at this time initially responding to calls relating to homelessness and mental health emergencies:

- City of South Pasadena
- City of San Marino
- City of Arcadia

An additional mobile crisis team will provide services in the City of Montebello, supplementing the Montebello Community Assistance Program (MCAP).

The pilot program will launch in July 2022 with limited hours in the three cohort cities, and will co-respond with law enforcement. This will allow the participating cities to establish a strong program foundation, build trust, and collect data to inform program expansion. The teams will operate out of a retrofitted van that will be used for transport and to provide a space to serve clients. Service call data collection began in June 2022 to help inform the program design and deployment schedules. In this pilot phase, the primary purpose is to collect data, evaluate the resources needed, and establish strong connections with local service providers. Call data will also help to establish how the mobile crisis teams should expand as the program advances.

Two critical components of the pilot program launch are data collection and service connection. As part of its contract with the SGVCOG, LACADA will be required to collect data on the services provided, which will be an essential component of the program evaluation. In coordination with the SGVCOG and the participating cities, the program will establish key program metrics and will ensure that data is being collected and shared to evaluate these program metrics. In addition, while the mobile crisis teams

will be focused on responding to emergencies, another critical component is connecting these clients to more appropriate on-going services, including those provided by the Los Angeles Homeless Services Authority (LAHSA), Union Station Homeless Services (USHS), the Los Angeles County Department of Health Services (DHS), the Los Angeles County Department of Mental Health (DMH), and other local organizations and entities that are critical participants in the homeless services system. LACADA is already an active participant in the County's coordinated entry system (CES), and the County's mental health and substance use disorder (SUD) systems, so it will be well-positioned to maximize these linkages. The City has already hosted several convenings of homeless services providers and other stakeholders to help build engagement and connections between the upcoming mobile response program. It is expected that this coordination will continue as the program roll-out advances.

There is no cost to the City to participate in this program, which will run from July 2022 to May 2023.

Analysis

Since September 2020, the South Pasadena Police Department has worked closely with the SGVCOG in researching a Mobile Crisis Intervention Service Team. One of the critical issues identified through regional coordination and collaboration was the need for an alternative crisis response option and immediate resource response for people experiencing mental health, substance abuse, and homelessness.

City Leaders, City Staff, and members of the police department have hosted and attended SGVCOG Mobile Crisis Intervention Service Team meetings. They have been part of the SGVCOG's Request for Proposal (RFP) Committee, the SGVCOG Steering Committee, and the SGVCOG Implementation Team. The City and Mayor Cacciotti have also been assisting the SGVCOG with seeking future funding beyond Measure H for the Mobile Crisis Intervention Team, including California State Senator Anthony Portantino regarding local funding opportunities, and writing support letters for congressional funding to the US. Senate.

Although most of the responses will require a co-response, the program alleviates the burden placed on Police and Fire/EMS to manage crises derived from emotional distress, substance abuse, and homelessness. The program is not designed to replace Police and Fire. The program is designed to better assist all members of our community and those who visit the City of South Pasadena.

The Mobile Crisis Pilot Program is an integral part of the adopted 2021-2026 Strategic Plan. The purpose of the Strategic Plan is to provide the City with a guiding document, setting priorities for the next five years. The Strategic Plan considers the city's needs while balancing available resources and utilizing best practices to deliver services. The First Quarter 2021-2026 Strategic Plan Update approved by Council on May 18, 2022 includes Item 5e Homeless Initiatives to work with the SGVCOG on a Mental Health/Crisis Intervention Program.

5e. Homeless Initiatives (3f combined with 5e)	• Continue working with the SGVCOG on region-wide solutions • Participate in Mental Health/Crisis Intervention Program (CAHOOTS model) • Expand working relationship with community partners and Union Station	**FY 21-22**	**Police/Community Development**	The SGVCOG anticipates a June 2022 start date for the pilot project.

The Mobile Crisis Pilot Program elements are also included in Section 3 of the Resolution 7750 Condemning the City's History as a Sundown Town and Past Practices of Institutionalized Racism. The City's commitment to protect and support all residents regardless of housing or mental health status is affirmed in Section 3.

- Section 3. The City will evaluate policies, procedures, ordinances, programs, goals, and mission to foster an unbiased environment where no person or group is subject to discrimination, harassment, or disproportionate economic harm on the basis of race, ancestry, national, origin, color, religion, sex or sexual orientation.

The City has also created a Social Services and Mental Health Task Force which meets quarterly to discuss and support service programs available to our residents and community. The Social Services and Mental Health Task Force partners consist of local faith-based groups, community partners, Council of Governments, housing and homeless resources, and the Department of Mental Health. The Mobile Crisis Pilot Program has been an integral part of the quarterly discussions with support from local agencies and groups. Additional stakeholders and providers continue to be identified and included in these meetings.

The Pilot Program will provide for 40 hours of service shared between San Marino, Arcadia, and South Pasadena on a weekly basis.

City	Day of the Week	Number of Hours
Arcadia	Friday	10 hours
San Marino	Monday	5 hours
South Pasadena	Thursday	10 hours
Available to all participating cities	Rotating as needed	15 hours

The SGVCOG agreement letter is scheduled to go Council in the three pilot cohort cities between July 13 – July 20. The letter's terms fall within guidelines of the City's adopted 2022 Legislative Platform, approved by Council on April 6, 2022.

Pilot Program Implementation

The Pilot phase will launch as a co-response model to build confidence and competence. It will focus on data for future program expansion. The pilot phase will include program education for city staff and the public. As a shared service, the cities of South Pasadena, San Marino, and Arcadia will involve a co-response with LACADA

staff and law enforcement or fire/EMS as needed for a mental health crisis or assisting with calls involving the un-housed. The Mobile Crisis Service Team will comprise a Mental Health Clinician and a Peer Support Specialist.

Steps for a Co-Response:

1. Calls for service received by dispatch, 911 will triage the situation, and if Mobile Crisis Team is needed, Police will have a co-response.
2. Dispatch will contact Mobile Crisis Team via phone to deploy.
3. Mental Health Officer and Mental Health Team respond to the call with Police

Statistics from South Pasadena Police Department computer aided dispatch system from January 1, 2019-January 14, 2022 recorded 44 calls in the two year period where a subject was transported to an area medical facility and placed on a Welfare and Institutions (WIC) 5150 hold. The chart below details the police time spent and time of occurrence:

January 1, 2019 – January 12, 2022 Call for Mental Health Service from South Pasadena Computer Aided Dispatch System	
Number of calls	44
Total time on calls	4,634 minutes (105 Hours)
Average call time	105 Minutes (1 Hour and 45 Minutes)

The co-response cuts down on officer time by allowing officers to hand over individuals for care, allowing officers to remain within City limits, instead of transporting to County Mental Health facilities (Sylmar, Irwindale, and Los Angeles). While individuals are being transported by the mental health team, the receive immediate care. The average transport time to a County mental health facility is 90 minutes roundtrip for South Pasadena Police personnel. The pilot co-response program will provide immediate care to the individual in crisis, by social service and mental health providers.

Fiscal Impact
There is no cost to the City to participate in the Pilot Program at this time. The SGVCOG has no program funding allocated for the next fiscal year 2022-2023, but the SGVCOG continues to actively seek county, state, and federal funds for the program.

The City Council approved the Fiscal Year 2021-2022 budget which included $200,000 to be set aside from the Police Department budget for a Mobile Crisis Intervention Team. The $200,000 allocation from the Police Department budget for social services has not yet been utilized and has carried over to the current fiscal year 2022-2023, and there is no anticipation of Police Department staffing overtime being the program will consist of 10 hours per week during the pilot phase.

Attachment: San Gabriel Valley Council of Governments Mobile Pilot Program Agreement Letter

ATTACHMENT

San Gabriel Valley Council of Governments Mobile
Pilot Program Agreement Letter

REGIONAL HOMELESSNESS, MENTAL HEALTH & CRISIS RESPONSE PILOT PROGRAM LETTER AGREEMENT

July 20, 2022

Arminé Chaparyan
City Manager

City of South Pasadena
1414 Mission Street
South Pasadena, CA 91030

RE: Letter Agreement for South Pasadena's Participation in SGVCOG's Homeless, Mental Health and Crisis Response Pilot Program

Dear Ms. Chaparyan,

This letter is in response to the City of South Pasadena's ("City") request to participate in the following San Gabriel Valley Council of Governments' ("SGVCOG") Homeless, Mental Health and Crisis Response Pilot Program ("Program"), in which non-violent 911 calls related to behavioral health and homelessness are diverted to a two-member Mobile Crisis Team ("MCT") consisting of a Clinician and a Peer Support Specialist or Substance Use Disorder Counselor. The initial pilot phase will launch as a co-response model.

The SGVCOG approves the City's request and will therefore authorize services to the City throughout the duration of the Program. Through participation in this Program, the City will receive the homeless and mental health related services as described above. Key details and responsibilities of each agency are outlined below.

- Anticipated Start Date: July 2022
- Anticipated Completion Date: May 31, 2023
- SGVCOG Responsibilities:
    - Undertake procurement and execute a contract with Los Angeles Centers for Alcohol and Drug Abuse (L.A. CADA) to implement the Program.
    - Manage, make eligible payments, and administer L.A. CADA's contract to ensure the Program is being implemented as contemplated under this MOA.
    - Manage the operating budget for the Program.
    - Provide any updated point-of-contact to serve as the SGVCOG's Project Manager with name, title, and contact information.
    - Respond to and address City concerns regarding service provider performance.
    - Coordinate conference calls and/or meetings with City as necessary.
    - Hold monthly check-in meetings with City's Project Manager to support information sharing.

- Gather data from City related to homeless, mental health, and crisis calls for service and utilize/interpret the data to enhance program effectiveness.
- Provide City with monthly reports illustrating program effectiveness to include quantitative data analysis and performance metrics.
- The SGVCOG reserves the right to withdraw Program services from the City should the City not perform its responsibilities and/or provide the required resources to support the Program.
- SGVCOG agrees to defend, indemnify, and hold free and harmless the City, its elected officials, officers, agents, employees, and volunteers, at SGVCOG's sole expense, from and against any and all claims, actions, suits, or other legal proceedings brought against the City, its elected officials, officers, agents, employees, and volunteers arising out of or relating to the acts or omissions of SGVCOG in connection with this Letter Agreement.

- City Responsibilities:
  - Maintain membership in the SGVCOG during the entire term of this MOA.
  - Participate in monthly Homeless Working Group meetings.
  - Provide any updated point-of-contact to serve as the City's Project Manager with name, title, and contact information.
    - Project Manager will serve as a liaison to help integrate the Program into the City's emergency response network.
  - Be willing to discuss changes and/or modifications to existing processes to integrate the MCT.
  - Partner with SGVCOG and L.A. CADA to implement the Program.
  - Actively participate and utilize the Program services.
  - Provide feedback and raise issues to the SGVCOG on the implementation and iteration of the Program.
  - Attend and participate in regular Program check-in meetings.
  - Identify any existing City services to help coordinate care.
  - Respond to requests for data and information, review materials, and provide input to the SGVCOG and its selected service provider(s) to support the implementation of the Program.
  - Provide a physical workspace location for the Mobile Crisis Team members.
  - Provide storage space for the MCT van to be stationed during and outside of service hours when needed.
  - The City reserves the right to withdraw from the Program should the SGVCOG and/or the service provider do not fulfill their duties and responsibilities.
  - City agrees to defend, indemnify, and hold free and harmless the SGVCOG, its elected and appointed boards, officials, officers, agents, employees, members, and volunteers, at City's sole expense, from and against any and all claims, actions, suits, or other legal proceedings brought against the SGVCOG, its elected and appointed boards, officials, officers, agents, employee members, and volunteers arising out of or relating to the acts or omissions of City in connection with this Letter Agreement.

Should you have any questions regarding this Program, please contact Caitlin Sims at csims@sgvcog.org.

Sincerely,

Marisa Creter
Executive Director

ACKNOWLEDGED AND ACCEPTED:

City of South Pasadena

_____ _____
Arminé Chaparyan Date
South Pasadena City Manager

Cc: Tamara Binns, City of South Pasadena Assistant to the City Manager
Cc: Lt. Shannon Rebledo, City of South Pasadena Police Department
Cc: Caitlin Sims, SGVCOG Principal Management Analyst
Cc: Samuel Pedersen, SGVCOG Management Analyst

City Council Agenda Report

ITEM NO. 30

DATE: July 20, 2022

FROM: Arminé Chaparyan, City Manager AC

PREPARED BY: Angelica Frausto-Lupo, Community Development Director
Elizabeth Bar-El, AICP, Interim Deputy Director, CDD

SUBJECT: **Discussion of Housing Element Letter From the State Department of Housing and Community Development (HCD) And Possible Direction to Staff on Strategies**

Recommendation

It is recommended that the City Council:

1. Review HCD's July 8, 2022, letter reviewing South Pasadena's 2nd Draft Housing Element (Attachment 1); and,
2. Provide direction regarding strategies to address HCD's comments.

Background

The City of South Pasadena submitted a draft and subsequent draft of the 6th Cycle (2021-2029) Housing Element to the State Department of Housing and Community Development (HCD) for compliance/certification review. In response to informal comments received from HCD during the HCD review period, staff provided a letter to HCD with additional revisions and explanations and posted such for public access on June 29, 2022. The subsequent draft sought to address all issues that were included in the response letter from HCD to the initial draft.

On July 8, 2022, HCD sent a response letter to the subsequent draft (Attachment 1). HCD accepted several revisions as fully responsive. However, HCD has additional comments noting that several areas still require additional information and analysis in order to obtain certification. In some cases, HCD's directions will require additional clarification from HCD to enable the City to address their comments. Staff has already reached out to HCD to coordinate such meeting. The letter does provide information now on certain concerns that were previously not made clear in the earlier comment letter.

Analysis

Key Review Comments to Address

6th Cycle RHNA

As one of the oldest incorporated cities in the Los Angeles area, South Pasadena is largely built-out with only a small number of vacant parcels available for new construction. Nevertheless, the parameters used by Southern California Association of Governments (SCAG) to determine the 6th Cycle Regional Housing Needs Allocation (RHNA) for all cities resulted in higher RHNA allocations for cities with transit access and proximity to regional employment centers. South Pasadena was identified for a higher number of housing units --2,067 units-- in the 6th Cycle RHNA. By contrast, 123 units (5 affordable) were built over the past eight years during the 5th Cycle, when that RHNA was 63 units total, 38 affordable. SCAG denied the City's appeal during the RHNA process and recent case law has settled the legal question regarding any ability for cities to seek legal intervention outside of the administrative appeal process. Accordingly, the issue of the number of units (2,067 units) required to be accommodated by the City in the 6th Cycle revision to the Housing Element is fixed.

Sites Inventory

The Sites Inventory is an important feature in achieving a compliant housing element given the city's size and RHNA. The inventory is comprised of two parts to identify sites meeting state criteria as suitable sites for development: sites available for moderate and above-moderate housing development; and sites available for potential affordable housing development. Notably, the City is *not* required to develop these sites, but rather, *identify* sites that are adequately zoned to allow for the development of the number of both affordable housing and moderate/above moderate housing units in the RHNA.

Over the past two years, PlaceWorks, in coordination with Planning staff, has conducted an exhaustive analysis of vacant properties and non-vacant properties that have potential for housing development under the current zoning code or that will have such potential under the revised General Plan, Downtown Specific Plan, and changes to the zoning code. Staff and consultants have attempted to obtain as much information as possible from property owners over the past two years through direct and written communication to property owners. More recently, staff redoubled this effort to contact property owners of sites that were questioned by HCD or by public comment. Not all property owners were responsive, though this effort yielded confirmation of the interest in developing some sites and removal of others when owners indicated disinterest in developing their property within the 6th Cycle. Recently housing applications were received on identified sites with unit requests lower than the number of units projected under the draft housing element. Such sites therefore are required to be redefined based on the project characteristics, impacting the inventory composition.

While some vacant parcels identified in the southwest part of the city are legal parcels, with R1 zoning recorded for many years, roads in that area have not yet been developed. While owners of these parcels have the legal right to construct a home on their properties, as with any development, there would be associated infrastructure development required. Some of these sites were included on the sites inventory, but have been questioned by HCD due to the cost of development of such infrastructure. Based on further discussion with HCD, these sites with infrastructure development constraints will need to be

removed. This will reduce the "surplus" in the number of units for the moderate/above-moderate inventory. This proposed action was indicated in the City's June 29 letter to HCD, but the short turnaround time following receipt of HCD's informal comments did not allow staff to develop a specific list. At this time, staff is working through the July 8 letter to determine the full effect on the Inventory of sites to be removed or adjusted and how locations for these units will be otherwise identified.

Accessory Dwelling Units (ADUs)
ADUs comprise a small but important part of the number of units to address the RHNA. State law does not require that the City identify specific properties with potential for ADUs, but rather requires a forecast of the reasonable number of ADUs anticipated based on trends. A "safe harbor" formula can be used, which looks back at an average of past years of ADU development to calculate the number of units HCD will accept as reasonably likely to be developed. For South Pasadena, that formula yields 81 (roughly 10 per year) ADUs, based on past development trends. The safe harbor formula calculation averages past years that include three years that *preceded* the ADU ordinance. As few ADUs were built prior to the ADU ordinance, such formula is not in the City's best interest when compared to the City's *actual* ADU development trends. By contrast, development since 2021 has been more robust: in 2021, 19 ADUs received building permits; and, as of June 1, 2022, Building & Safety has issued 29 permits for ADUs. It is anticipated that for 2022 the number will easily exceed the forecast provided in the housing element.

The ADU projection analysis in the subsequent draft, modified by additional language in the June 29th letter to HCD, is extensive. Cities are allowed to use other methodology supported by local conditions to propose inclusion of a higher number of ADUs, and there are examples of other certified housing elements that have exceeded the safe harbor. The steep increase in ADU permits since adoption of the revised ordinances is a verified local condition that justifies a higher number than the safe harbor, and is an important component of the City's approach to RHNA compliance. The draft housing element (as revised based on the informal comments) included an appendix with a formula that yields 297 ADUs over the next eight years (building up over the next two years to average roughly 37 per year). Additionally, 9 ADUs constructed between July 1, 2021 and December 31, 2021 count toward achievement of the RHNA target.

Discussions with HCD indicated that the City appeared to be on the right track in terms of its approach to including ADUs for RHNA compliance. The July 8 letter states that "HCD is supportive of regional affordability analysis" and the City will need clarification of their request to address their prior finding on ADU affordability to "also address public comments" (from one member of the public). The City will need to clarify this comment, as multiple housing elements in the SCAG region using this formula have been certified without question.

Suitability of Non-vacant Sites
On page 4 of the letter, HCD requests "an analysis of how given land use constraints such as height limits and the inclusionary zoning requirements may make development infeasible on sites." (Emphasis added).

- *Inclusionary Housing Ordinance*

On April 7, 2021, the South Pasadena City Council adopted an inclusionary housing ordinance (SPMC 36.375) that now applies to all multi-family projects with three or more residential units. The ordinance requires that 20% of units, calculated from the allowable base density, be provided as deed-restricted, affordable units for qualified Very Low, Low or Moderate-income residents. The ordinance was developed with significant Planning Commission input, including virtual public meetings and a Commission sub-committee that worked intensively with staff. It is an important component of South Pasadena's plan for affordable housing development.

The State recognized the benefits of such ordinances by adopting AB1505 (effective January 1, 2018), which authorizes the legislative body of any city or county to adopt an inclusionary housing ordinance that includes residential rental units affordable to lower- and moderate-income households. The legislative findings on AB1505 stated: "*Inclusionary housing ordinances have provided quality affordable housing to over 80,000 Californians, including the production of an estimated 30,000 units of affordable housing in the last decade alone. Since the 1970s, over 170 jurisdictions have enacted inclusionary housing ordinances to meet their affordable housing needs*."

Cities within the region that have required inclusionary housing for decades, such as West Hollywood and Santa Monica, have achieved significant inventories of affordable units over time that have enabled them to comply with their RHNA allocations.

Despite this general encouragement of inclusionary housing as an important affordable housing production tool, HCD has stated its concern that the IHO may serve as a constraint to development. In order to confirm that the City's ordinance does not constrain the feasibility of constructing housing in the City, especially in light of high inflation and an increase in construction costs since its adoption, in May 2022, the Council authorized a consultant (Economic Planning Systems (EPS)), to conduct a feasibility analysis study. This study has now been completed, and confirms that the City's inclusionary requirement is feasible (Attachment 2). A full discussion of the study is scheduled to be held at the July 26 Planning Commission special meeting.

- *Citywide Height Limit*

HCD has identified the citywide 45-foot height limit as a potential constraint to development. HCD has indicated that the City should address the citywide height limit as a constraint to achieving the density needed on sites identified to address the RHNA. Additional information regarding the history of the 1980 citizen-sponsored measure opposed to a significant commercial development was provided to HCD to demonstrate

that the City had not previously used such measure as a way to prevent housing development. City staff additionally provided description of the interaction between state density bonus law which would allow for minor deviations above 45 feet and this City-imposed height limit. Nevertheless, HCD has identified this requirement as an impediment to development which must receive further analysis by the City to prove that development goals can achieve the RHNA. Unfortunately, it is unlikely that such analysis can be completed to the satisfaction of HCD to prove development will likely take place over the next 8-years with such height limit in place.

This issue was identified by staff in 2020 as a potential impediment to development and brought to council on July 15, 2020 (Attachment 3). The Council considered placing a measure on the ballot to reconsider the 45-foot height limit. At that time, the draft RHNA had been released but not finalized and the City was planning to appeal its allocation. Staff had not yet fully analyzed the opportunities for establishing an inventory of sites to comply with the RHNA. Members of the public provided comments both in favor and opposed to this action. Most importantly, there had not been input from HCD on the height limit being a potential impediment to development of sites and achieving the City's RHNA. Ultimately, a split Council did not have a majority to initiate the ballot measure.

Strategies in Place

The Council has previously identified that new strategies are needed to address this significantly increased State mandate and to make South Pasadena affordable to a wider spectrum of the population. The Council recognized this need by commissioning a report and holding a study session on tools for developing affordable housing on March 21, 2018.

As an outcome, Council directed staff to begin a process to propose an inclusionary housing ordinance and to explore the role of accessory dwelling units (ADUs) for creating more housing units with greater affordability. Council's direction was followed up with the Planning Department's "housing initiatives" effort, which in 2021 culminated with adoption of the City's first inclusionary housing ordinance and two ADU ordinance amendments, which now provide clear standards and processes for ADUs on both historic and non-historic properties. Both of these tools are producing results, particularly the ADU ordinance, and will be instrumental for housing production in the upcoming RHNA period.

Housing applications are also expected to increase with adoption of the General Plan update and the Downtown Specific Plan (DTSP), which will significantly enhance housing opportunities. The DTSP in particular contains several key non-vacant inventory sites that will have new incentives for housing, particularly density and height bonuses and parking reductions associated with the provision of affordable housing. Immediately following its adoption as a specific plan, provisions would allow applications for housing on sites within the DTSP that may be approved ministerially, whether mixed-use or 100% residential. Other areas in the General Plan, such as the Ostrich Farm and commercial centers, will require follow-up with zoning amendments in order to implement the policies and allow permit approval. Revision of these documents to ensure consistency with the housing

element is nearly complete, and staff expects to release them for public review and discussion by mid-August.

The City is also already implementing State housing law that allows residential properties to include an ADU and a junior ADU (JADU), doubling or tripling the capacity of single-family properties. Also, on single-family properties, SB9 allows property owners to build a second residential unit or sub-divide the lot to build units under separate ownership, although the State's de facto method to analyze the track record within the jurisdiction is too new to effectively evaluate the potential for SB9 units as part of the sites inventory. These State-mandated changes to the land use development environment support the State's goal of increasing housing with higher density in established urban areas that can provide better transportation and concentration of services. South Pasadena has a large amount of land area in single-family zones (R1/RE), most of which are developed with one unit, but it has not been established that SB9 units will be a significant source of additional units in South Pasadena.

Issues in HCD Review Letter Needing Additional Review

Staff has identified several comments from HCD with direction to South Pasadena that appear to require a level of analysis and revision that is different from what has been expected of other cities that have received housing element certification. The City will need clarification from HCD to address these issues. Some examples are:

- Zoning Code Amendments: HCD has asked the City to provide specific language for zoning code amendments to accommodate housing construction in compliance with housing element objectives. It is not customary that this is required, and is not identified where State law requires this to be included in a housing element. The draft housing element does include Program 3a to rezone for RHNA capacity by October 15, 2022.
- AFFH: The 2nd Public Review Draft analyzed identified sites relative to groups of socio-economic characteristics as part of its analysis of Affirmatively Furthering Fair Housing (AFFH). The additional language provided detailed descriptions of how these sites would provide access for lower-income groups to amenities available in the community. The City reviewed its programs and believed they were consistent with this analysis and would promote inclusion. In response, HCD has added that the City should "address any isolation of the regional housing need allocation (RHNA) and formulate appropriate policies and programs to foster more inclusive communities." The meaning of HCD's comment is unclear, and this is a comment that the City's consultants have not seen applied to other housing elements with similar approaches to addressing AFFH.
- Owner interest: Although Appendix A provides a summary of owner interest for low-income RHNA inventory properties, HCD has specified that the City must

receive “concrete evidence of owner interest” for certain sites, a standard that is not typical of its review of other cities.

Strategies for Consideration:
In order to move forward toward a compliant housing element, staff suggests that the Council consider the following strategies to attain Housing Element certification and compliance:

- Continue to reach out to HCD to resolve outstanding issues and achieve conditional approval of a draft for adoption. Invite HCD to come to South Pasadena to discuss issue on-site.
- Modify zoning limits to accommodate more housing to address HCD concerns.
- Continue to fine-tune the inventory to ensure properties that will be acceptable to HCD for certification.
- Explore legislative action that may assist the City to comply with the challenges of the RHNA.
- Moving forward with the most important housing initiatives, including the GP/DTSP, to adopt standards that encourage more housing. Follow up with re-zoning for properties with housing potential that are not in the DTSP, such as the Ostrich Farm area and commercial centers.
- Provide direction on whether to amend the Zoning Code’s inclusionary housing requirements at this time.

Fiscal Impact
This information item does not have any direct fiscal impact. Based on tonight’s City Council direction, as appropriate, staff will bring back a more specific cost estimate with a matching appropriation request.

Attachments:
1. HCD Letter dated July 8, 2022
2. EPS Inclusionary Housing Ordinance Feasibility Study Memo
3. July 15, 2020 Staff Report

ATTACHMENT 1
HCD Letter dated July 8, 2022

DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT
DIVISION OF HOUSING POLICY DEVELOPMENT
2020 W. El Camino Avenue, Suite 500
Sacramento, CA 95833
(916) 263-2911 / FAX (916) 263-7453
www.hcd.ca.gov

July 8, 2022

Angelica Frausto-Lupo, Director
Community Development Department
City of South Pasadena
1414 Mission Street
South Pasadena, CA 91030

Dear Angelica Frausto-Lupo:

RE: City of South Pasadena's 6th Cycle (2021-2029) Revised Draft Housing Element

Thank you for submitting the City of South Pasadena's (City) revised draft housing element received for review on May 11, 2022 along with revisions made available to the public on June 29, 2022. Pursuant to Government Code section 65585, subdivision (b), the California Department of Housing and Community Development (HCD) is reporting the results of its review. Our review was facilitated by a conversation on June 22, 2022 with you, Elizabeth Bar-El, Interim Long Range Planning Principal Planner, Matt Chang, Planning Manager, Andrew L. Jared, City Attorney and your consultant team. In addition, HCD considered comments from Active San Gabriel Valley, Californians for Homeownership and Josh Albrekston pursuant to Government Code section 65585, subdivision (c).

The revised draft element addresses many statutory requirements described in HCD's December 21, 2021 review; however, revisions will be necessary to comply with State Housing Element Law (Article 10.6 of the Gov. Code). The enclosed Appendix describes the revisions needed to comply with State Housing Element Law.

As a reminder, the City's 6th cycle housing element was due October 15, 2021. As of today, the City has not completed the housing element process for the 6th cycle. The City's 5th cycle housing element no longer satisfies statutory requirements. HCD encourages the City to revise the element as described above, adopt, and submit to HCD to regain housing element compliance.

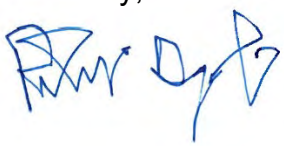
For your information, pursuant to Assembly Bill 1398 (Chapter 358, Statutes of 2021), as the City failed to adopt a compliant housing element within 120 days of the statutory deadline (October 15, 2021), Program 3.a (Rezone and Redesignate Sites) and related programs must be completed no later than one year from the statutory deadline. Otherwise, the local government's housing element will no longer comply with State

Housing Element Law, and HCD may revoke its finding of substantial compliance pursuant to Government Code section 65585, subdivision (i). Please be aware, if the City fails to adopt a compliant housing element within one year from the statutory deadline, the element cannot be found in substantial compliance until rezones to accommodate a shortfall of sites pursuant to Government Code section 65583, subdivision (c),paragraph (1), subparagraph (A) and Government Code section 65583.2, subdivision (c) are completed.

Several federal, state, and regional funding programs consider housing element compliance as an eligibility or ranking criteria. For example, the CalTrans Senate Bill (SB) 1 Sustainable Communities grant; the Strategic Growth Council and HCD's Affordable Housing and Sustainable Communities programs; and HCD's Permanent Local Housing Allocation consider housing element compliance and/or annual reporting requirements pursuant to Government Code section 65400. With a compliant housing element, the City will meet housing element requirements for these and other funding sources.

HCD appreciates the hard work and dedication of you and the rest of the City's housing element team during the review. We are committed to assist the City in addressing all statutory requirements of State Housing Element Law. If you have any questions or need assistance, please contact Connor Finney at Connor.Finney@hcd.ca.gov.

Sincerely,



Paul McDougall
Senior Program Manager

Enclosure

APPENDIX
CITY OF SOUTH PASADENA

The following changes are necessary to bring the City's housing element into compliance with Article 10.6 of the Government Code. Accompanying each recommended change, we cite the supporting section of the Government Code.

Housing element technical assistance information is available on HCD's website at http://www.hcd.ca.gov/community-development/housing-element/housing-element-memos.shtml. Among other resources, the housing element section contains HCD's latest technical assistance tool, Building Blocks for Effective Housing Elements (Building Blocks), available at http://www.hcd.ca.gov/community-development/building-blocks/index.shtml and includes the Government Code addressing State Housing Element Law and other resources.

A. Housing Needs, Resources, and Constraints

1. *Affirmatively further[ing] fair housing in accordance with Chapter 15 (commencing with Section 8899.50) of Division 1 of Title 2…shall include an assessment of fair housing in the jurisdiction. (Gov. Code, § 65583, subd. (c)(10)(A).)*

   Identified Sites and Affirmatively Furthering Fair Housing (AFFH): The element includes some discussion of sites relative to groups of socio-economic characteristics. For example, the element notes the proportion of sites to accommodate housing for above moderate-income households in a group where less than 10 percent of the households are below the poverty line. However, as noted in the prior review, the element must still analyze the location and impact of sites by all income groups. For example, the element could evaluate the number of units by income group by census tract or neighborhood. This analysis should also specifically address sites by all income groups by income in addition to poverty. Based on this analysis, the element should then address any isolation of the regional housing need allocation (RHNA) and formulate appropriate policies and programs to foster more inclusive communities.

   Local Data and Knowledge: While the element now includes some discussion of historical development patterns and racial exclusion for significant portion of the 20th century, it should include additional discussion of land use practices including zoning, growth controls, height initiatives and any other practices that affect housing choices since the latter half of the 20th century. This information should complement the discussion of the socio-economic patterns within the City and the City relative to the region and based on a complete analysis, the element should formulate appropriate policies and programs to combat past patterns and impacts on inclusive communities.

   Contributing Factors to Fair Housing Issues: The element should re-assess and prioritize contributing factors based upon a complete analysis.

   Goals, Actions, Metrics, and Milestones: The element must be revised to add or modify goals and actions based on the outcomes of a complete analysis. Goals and actions must

specifically respond to the analysis and to the identified and prioritized contributing factors to fair housing issues and must be significant and meaningful enough to overcome identified patterns and trends. Actions must have specific commitment, metrics, milestones and geographic targeting and must address housing mobility enhancement, new housing choices and affordability in high opportunity areas, place-based strategies for community preservation and revitalization and displacement protection.

2. *An inventory of land suitable and available for residential development, including vacant sites and sites having realistic and demonstrated potential for redevelopment during the planning period to meet the locality's housing need for a designated income level, and an analysis of the relationship of zoning and public facilities and services to these sites. (Gov. Code, § 65583, subd. (a)(3).)*

   Realistic Capacity: As found in the prior review, due to recent legislation (SB 9), the element assumes 100 percent of larger (greater than 0.2 acres) vacant sites will double in capacity and should support these assumptions. In response, the element states the City has received a fair amount of interest but has not received any SB 9 related applications. There is no discussion of what a fair amount of interest means or whether that interest is related to the assumptions of larger vacant sites. As a result, the element should still include information to support this assumption. For example, the City could survey owners or rescale assumptions with enhanced policies and programs, including monitoring and alternative actions, to encourage development consistent with recent legislation.

   Suitability of Nonvacant Sites: As found in the prior review, the element must include additional discussion of recent experience in redevelopment and either remove sites or include additional analysis on the extent existing uses impeded additional development. In response, the element does not remove sites and added little to no discussion of existing uses. In addition, HCD has considered significant comments indicating that existing uses impede additional development on many sites, including those noted in the prior review. The element must address HCD's prior finding as well as public comments regarding the extent existing uses impede additional development. For example, Sites 3, 5, 6, 8, 10 should include specific information, such as concrete evidence of owner interest, as well as analysis on how given land use constraints such as height limits and the inclusionary zoning requirements may make development infeasible on sites. For site 9, the element should include evidence development is cleared by Edison. Additional sites warranting evidence the uses will likely discontinue include sites 2, 13, 14, 17, 18, 19, 20, 21, 22, 23, and 24. In some cases, some sites, have had recent renovations, plans on future renovations, new businesses with new leases, healthy and necessary businesses such as grocery stores and malls that serve large populations with busy parking lots. The element should include information addresses these uses and how redevelopment is likely in the planning period.

   In addition, because the housing element relies upon nonvacant sites to accommodate more than 50 percent of the RHNA for lower-income households, it must demonstrate existing uses are not an impediment to additional residential development and will likely discontinue in the planning period. (Gov. Code, § 65583.2, subd. (g)(2).) Absent findings (e.g., adoption resolution) based on substantial evidence, the existing uses will be

presumed to impede additional residential development and will not be utilized toward demonstrating adequate sites to accommodate the RHNA.

Small Sites: Sites smaller than half an acre are deemed inadequate to accommodate housing for lower-income households unless it is demonstrated, with sufficient evidence, that sites are suitable to accommodate housing for lower-income households. While the City's response document includes some discussion of small sites and common ownership, this information should be incorporated into the element and programs should be modified as necessary to address the additional discussion.

City-owned Sites: While the element now includes a program to facilitate development on City-owned sites and coordinate with property owners, it should still discuss whether existing uses impede additional development and any known conditions that preclude development in the planning period. In addition, the housing element must include a description of whether there are any plans to dispose of the properties during the planning period and how the jurisdiction will comply with the Surplus Land Act Article 8 (commencing with Section 54220) of Chapter 5 of Part 1 of Division 2 of Title 5.

Environmental Constraints: As discussed in our previous letter, the element notes many parcels are impacted by environmental constraints and sensitivities and generally describes a few environmental conditions in some detail, such as slopes, within the City. However, the element must relate those conditions to identified sites and describe any other known environmental or other conditions that could impact housing development on identified sites in the planning period. For example, the analysis on sites on steep slopes should include trends and examples of homes being built on these sites as well as why these sites have not been redeveloped.

Accessory Dwelling Units (ADUs): As noted in the prior, the element should either adjust projections downward based actual on the average number of ADU permitted since 2018 (approximately 10 units per year) or include additional analysis and policies and programs. In response, the element continues similar projections, but revisions made available note some more recent trends. The element should be updated and projections should be scaled based on the recent trends. In addition, the City's records differ from HCD's ADU records and should be reconciled and, while HCD is supportive of regional affordability analysis, the element should also address public comments regarding HCD's prior finding on ADU affordability.

Electronic Sites Inventory: For your information, pursuant to Government Code section 65583.3, the City must submit an electronic sites inventory with its adopted housing element. The City must utilize standards, forms, and definitions adopted by HCD. This is especially important for determining sites that have been utilized in multiple planning periods and are subject to by-right provisions. Please see HCD's housing element webpage at https://www.hcd.ca.gov/community-development/housing-element/index.shtml#element for a copy of the form and instructions. The City can reach out to HCD at sitesinventory@hcd.ca.gov for technical assistance.

3. *An analysis of potential and actual governmental constraints upon the maintenance,*

improvement, or development of housing for all income levels, including the types of housing identified in paragraph (1) of subdivision (c), and for persons with disabilities as identified in the analysis pursuant to paragraph (7), including land use controls, building codes and their enforcement, site improvements, fees and other exactions required of developers, and local processing and permit procedures... (Gov. Code, § 65583, subd. (a)(5).)

Land-Use Controls: The prior review found the element must analyze, among other things multifamily parking garages, heights and open space and must address how development standards will facilitate achieving maximum allowable densities under the proposed overlay zones. In response, the element now identifies these standards but contains little to no analysis as described in the prior review. The revisions made available June 29, 2022, state these standards will be revised as part of Program 3.A but the program contains ambiguous commitment and generally states the standards "may" need revising. The element must include specific analysis as part of the housing element update and revise programs with specific commitments to address identified constraints, including heights. The City should engage the development community as part of this analysis. Please see HCD's prior review for additional information.

Processing and Permit Procedures: While the element now lists approval findings for various procedures, it must analyze these findings for impacts on housing cost, timing and approval certainty and include specific commitment to address identified constraints.

Other Local Ordinances: While the element now describes the inclusionary housing requirement and local height initiative, it generally does not analyze the impacts on housing cost, supply and ability to achieve maximum densities, including densities proposed as part of this housing element. For example, the analysis of the inclusionary requirement should, among other items, address the 20 percent requirement and cost impacts, 10 unit threshold, in lieu fees and cost of a comparable unit and how the inclusionary relates to State Density Bonus Law. The City should engage the development community as part of this analysis. Please see HCD's prior review for additional information.

B. Housing Programs

1. *Identify actions that will be taken to make sites available during the planning period with appropriate zoning and development standards and with services and facilities to accommodate that portion of the city's or county's share of the regional housing need for each income level that could not be accommodated on sites identified in the inventory completed pursuant to paragraph (3) of subdivision (a) without rezoning... (Gov. Code, § 65583, subd. (c)(1).)*

   As noted in Finding A2, the element does not include a complete site analysis, therefore, the adequacy of sites and zoning were not established. Based on the results of a complete sites inventory and analysis, the City may need to add or revise programs to address a shortfall of sites or zoning available to encourage a variety of housing types. In addition, the element should be revised as follows:

- Program 3.b (Mixed-use Development): As noted in the prior review, the Program should be revised with additional incentives or other strategies based on a complete analysis of nonvacant sites and realistic capacity assumptions.
- Program 3.d (Enable Parcel Assemblage): The Program should be modified based on a complete analysis of small sites. In addition, the program should consider additional incentives and more frequent review and revision.
- Program 3.f (ADU): While the program commits to review regulations in December 2023, it should commit to an earlier timeframe if comments are received from HCD on the City's recently amended ordinance.

2. *Address and, where appropriate and legally possible, remove governmental and nongovernmental constraints to the maintenance, improvement, and development of housing, including housing for all income levels and housing for persons with disabilities. The program shall remove constraints to, and provide reasonable accommodations for housing designed for, intended for occupancy by, or with supportive services for, persons with disabilities. (Gov. Code, § 65583, subd. (c)(3).)*

   As noted in Finding A3, the element requires a complete analysis of potential governmental and nongovernmental constraints. Depending upon the results of that analysis, the City may need to revise or add programs and address and remove or mitigate any identified constraints.

3. *Promote and affirmatively further fair housing opportunities and promote housing throughout the community or communities for all persons regardless of race, religion, sex, marital status, ancestry, national origin, color, familial status, or disability, and other characteristics... (Gov. Code, § 65583, subd. (c)(5).)*

   As noted in Finding A1, the element requires a complete analysis of AFFH Depending upon the results of that analysis, the City must revise or add programs.

C. Quantified Objectives

Establish the number of housing units, by income level, that can be constructed, rehabilitated, and conserved over a five-year time frame. (Gov. Code, § 65583, subd. (b) (1 & 2).)

The prior review found the element could consider conservation objectives beyond 5 units in the planning period. In response, the City adjusted its target to 20 units. HCD encourages the City to target a higher impact for the 8 year planning period.

D. Public Participation

Local governments shall make a diligent effort to achieve public participation of all economic segments of the community in the development of the Housing Element, and the element shall describe this effort. (Gov. Code, § 65583, subd.(c)(8).)

While the element describes comments and generally addresses comments, in some cases, comments do not appear incorporated into the housing element. The element should re-evaluate these comments and new comments received and incorporate those comments where appropriate. For example, HCD has considered many comments on identified sites as well as implementation of key mobility strategies such as the bike master plan that should be addressed and incorporated into the element.

In addition, public participation in the development, adoption and implementation of the housing element is essential to effective housing planning. During the housing element revision process, the City must continue to engage the community, including organizations that represent lower-income and special needs households, by making information regularly available while considering and incorporating comments where appropriate.

ATTACHMENT 2
EPS Inclusionary Housing Ordinance
Feasibility Study Memo

DRAFT MEMORANDUM

To: Angelica Frausto-Lupo and Liz Bar-El, City of South Pasadena

From: Julie Cooper, Thomas Gonzales, and Darin Smith

Subject: South Pasadena Inclusionary Housing Ordinance Feasibility Analysis; EPS #214034

Date: July 13, 2022

Introduction

The City of South Pasadena (City) adopted an inclusionary housing ordinance (IHO) in May 2021. The ordinance requires that a minimum of 20 percent of the total number of dwelling units in a residential or mixed-use development consisting of more than two units be provided at below-market-rate (BMR) prices affordable to Very-Low, Low, and/or Moderate-Income households, based on income standards established by the State of California's Department of Housing and Community Development (HCD). The ordinance allows, under certain circumstances, for development projects to pay an in-lieu fee as an alternative to providing required units. These circumstances include any for-sale project, which can pay an in-lieu fee instead of building on-site affordable units; as well as some rental projects, which have the option to pay an in-lieu fee for any fractional affordable units required.

The City engaged Economic & Planning Systems, Inc. (EPS) to analyze the impacts of the inclusionary requirements on the financial feasibility of building new market-rate housing in South Pasadena. EPS reviewed a range of for-sale and rental housing prototypes representative of likely new development in the City to assess whether each prototype would be able to achieve standard development return metrics with the inclusion of required affordable units. The analysis included consideration of development incentives available to projects with affordable units, specifically incentives offered under California's State Density Bonus law. As detailed in this memorandum, when these incentives are incorporated into the prototype development program, new residential projects are financially feasible even with the addition of the inclusionary requirements.

The Economics of Land Use

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Suite 410
Los Angeles, CA 90017
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Oakland
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Denver
Los Angeles

www.epsys.com

It is important to note that the feasibility analyses contained in this memorandum are based on generic prototypes meant to represent a typical or average development project. A developer's choice to ultimately pursue a residential development project in South Pasadena will be site-specific and depend on many factors that are impacted by regional market forces. While our analysis accounts for some of these factors, the cost and revenue expectations for a particular project will vary based on the size, location, layout, condition, and history of a specific project site, as well as the capabilities, business goals, and proposed project design characteristics of a specific developer. Most developer investment decisions are also strongly impacted by anticipated project timeline, and this analysis does not estimate the length of time needed to complete a project in South Pasadena, nor does it account for the impacts of time value of money over the course of a project.

Key Findings

1. **Under the City's inclusionary housing policy, multifamily rental and for-sale condominium products that utilize the development incentives under the State Density Bonus law are likely to be financially feasible.** Rental and for-sale prototype midrise projects of 55 to 70 units per acre that meet the City's inclusionary housing requirements are able to utilize the State's density bonus law, which allows projects with on-site affordable housing units to build additional market rate units beyond what is otherwise allowable under local zoning. With the use of this incentive, these projects are expected to meet standard development return thresholds.

2. **For-sale townhome projects are financially feasible even with the incorporation of required affordable units.** Based on strong market pricing, new for-sale townhome developments are expected to meet standard development return thresholds for feasibility, even when incorporating the City's requirement to include 20 percent of units affordable to Moderate-Income households.

Financial Feasibility Analysis

Methodology

EPS analyzed four generic prototypes that reflect rental and ownership residential products representative of likely future development projects in South Pasadena. The assessment of financial feasibility for each prototype involved calculating financial return metrics for the prototype and comparing them against typical industry target thresholds. The relevant return metrics are based on comparing total project revenues, including the combined value of all market-rate and affordable units, to total project development costs. EPS assumptions for prototype revenues, costs, and return metrics used in this analysis are detailed in the following sections.

Housing projects in California that incorporates affordable housing units may also be eligible to take advantage of additional incentives under the State Density Bonus Law, based on the proportion of affordable units relative to market-rate units. The Law allows

a project to be built at a higher density than what is allowed by local zoning. Given the proportion of required affordable units mandated by the City's ordinance, any project complying with South Pasadena's inclusionary requirements would be eligible for a density bonus. Therefore, EPS's analysis included assessing the feasibility of scenarios incorporating these incentives.

Product Prototypes

The prototype residential projects used in the feasibility analysis were informed by EPS research of the City's housing market. Research included review of recent developments and proposed projects, discussions with developers active in the City, and discussions with City staff.

The characteristics for the prototype development products are summarized in **Table 1**. Prototypes 1 and 2 represent owner-occupied, for-sale housing projects, while Prototypes 3 and 4 represent renter-occupied, multifamily apartment projects.

To create a more general and simplified analysis, each prototype project is assumed to comprise a single unit type. Prototype 1 includes 3-bedroom townhomes at 1,650 square feet with attached, 350-square-foot garage. Prototype 2 includes two-bedroom, 1,200-square-foot condominium units with two parking spaces per unit provided on-site. Prototypes 3 and 4 include two-bedroom, 1,000-square-foot rental units with one parking space per unit provided on-site. The prototype projects range in size from ten to 50 units, and in density from 20 units per acre to 70 units per acre.

The unit types for each prototype are meant to represent average unit sizes, with the resulting analysis demonstrating feasibility for an average residential project. The findings of this analysis assume that the unique unit mix of any particular project will, in aggregate, conform to these average unit sizes. However, as stated earlier, each specific project will have its own cost and revenue factors that may be impacted in part by its unit mix.

Table 1 Market-Rate Housing Development Prototype Characteristics

Prototype	Product Type	Construction Type	Unit Count	Density	Unit Size	Unit Sq. Ft.	Parking Type
1	For-Sale	Townhome	10	20 units/acre	3 Bedroom	1,650 sq. ft.	Attached garage
2	For-Sale	4-Story Wood Frame Condominium Bulding	50	55 units/acre	2 Bedroom	1,200 sq. ft.	2 spaces per unit (structured)
3	Rental	4-Story Wood Frame Apartment Building	30	55 units/acre	2 Bedroom	1,000 sq. ft.	1 space per unit (structured)
4	Rental	5-Story Wood Frame Apartment Building	40	70 units/acre	2 Bedroom	1,000 sq. ft.	1 space per unit (structured)

The feasibility analysis assumes that each of the prototype projects will meet the City's inclusionary housing requirements, which are outlined in **Table 2**. The unit count of each project was selected such that none of the prototypes result in fractional affordable units required, for simplicity of analysis. In addition, the analysis did not assess the feasibility impacts of the City's inclusionary requirements on rental projects of ten or fewer units, which are distinct from the requirements for projects with more than ten units (see **Table 2**). However, EPS estimates that the relative per-unit cost of meeting the required levels of affordability would be equal to or lower for these smaller projects relative to larger projects. This is because smaller projects are required to include affordable units at rents that are equal to or greater than larger projects (for example, projects with 10 units may provide one of their inclusionary units at rents affordable to Moderate-Income households, which is not an option for larger projects). Therefore, the smaller projects are likely to be at least as feasible as the larger projects analyzed, assuming all other development cost and revenue assumptions are held constant.

Table 2 Affordable Housing Required by Development Type per South Pasadena IHO

Development Project Type	Inclusionary Requirement [1]	Type of Units Provided
For Rent, 3-4 Units	Fractional Fee	Rental
For Rent, 5-9 Units	1 Low-Income Unit + Fractional Fee	Rental
For Rent, 10 Units	2 Low-Income Units, OR 1 Very-Low Income + 1 Moderate Income Unit	Rental
Rental Project with 11+ Units [2]	10% Very-Low Income Units + 10% Low-Income Units + Fractional In-Lieu Fee (if applicable)	Rental
For-Sale Project [3]	20% Moderate-Income For-Sale Units OR Match Rental Project Requirements OR Pay In-Lieu Fee	Either For-Sale or Rental

[1] All projects that ow e a fee on fractional units have the option to "round up" and provide a unit on-site.
households. Fractional units must be rounded up or paid via in-lieu fee.
[3] Fractional units must be rounded up or paid via in-lieu fee for Moderate-income units.
Source: South Pasadena Ordinance No. 2355, Inclusionary Housing Requirements.

Revenue Assumptions

Affordable Housing Revenue Assumptions

Both rental and for-sale values for affordable units are based on maximum housing costs affordable to households at various household income levels. Income levels in the County of Los Angeles are set by the California Department of Housing and Community Development (HCD) on an annual basis, which are in turn based on income limits published by the U.S. Department of Housing and Urban Development (HUD). **Table 3** shows the 2022 maximum incomes for three- and four-person households in each income

group. This analysis assumes a two-bedroom unit is occupied by a three-person household and a three-bedroom unit is occupied by a four-person household.[1]

Table 3 2022 Annual Household Income Limits for Los Angeles County

Income Group and Definition		2022 Maximum Income 3-Person Household	2022 Maximum Income 4-Person Household
Very Low	>30% to ≤50% AMI + *HUD adjustment [1]*	$53,600	$59,550
Low	>50% to ≤80% AMI + *HUD adjustment [1]*	$85,800	$95,300
Median (Base)	>80% to ≤100% AMI	$82,000	$91,100
Moderate	>100% AMI to ≤120% AMI	$98,350	$109,300
HUD Adjustment Factor for Very Low & Low Income Groups		130.8%	130.8%

[1] HUD applies adjustments to the amounts based on unusually high or low family income, uneven housing-cost-to income relationship, or other reasons.
Source: Los Angeles County, California Housing and Community Development (HCD).

The Area Median Income (AMI) in Los Angeles County is $82,000 for a family of three and $91,100 for a family of four. For the Low and Very-Low Income groups, the maximum incomes are adjusted upwards from their corresponding percent of AMI. HUD makes these adjustments to Low and Very-Low Income categories in counties with relatively high housing costs and/or relatively high or low household incomes. HUD does not apply these adjustments to the Moderate-Income category.

Based on these income limits, EPS calculated the maximum spending towards housing costs affordable at each income level, which is summarized in **Table 4**. Consistent with the City's ordinance, the analysis assumes that households spend 30 percent of their gross annual income on total housing costs. For rental units, housing costs include rent and utilities, and spending on utilities is subtracted from spending on total housing costs to determine the maximum rent that a household can pay in a year.[2] For for-sale units, housing costs include mortgage and interest payments, insurance, property taxes, and Homeowners Association (HOA) fees. To calculate the maximum affordable sale price for these units, EPS subtracted insurance, property taxes, and HOA fees from spending on total housing costs to estimate affordable monthly mortgage and interest payments. This calculation is detailed in **Table 5**.

Maximum incomes and associated affordable housing costs are shown for Low-Income or Very-Low Income households of three occupants, which correspond to the rental unit prototypes, and for Moderate-Income households of three and four occupants, which correspond to the for-sale unit prototypes. For for-sale units, EPS used a maximum income level of 110 percent of AMI to calculate housing costs for Moderate-Income Households. Using income levels somewhat below the top of the income range (120 percent of AMI) is common practice in calculating affordable rents and sale prices, as it

[1] Based on California Health and Safety Code Section 50052.5.

[2] The utility allowance for a two-bedroom unit is based on a schedule published by the Los Angeles County Development Authority (LACDA) (https://www.lacda.org/docs/librariesprovider25/public-documents/utility-allowance/ua-2021.pdf?sfvrsn=47bb66bc_4)

sets the housing cost at a level that is truly affordable (e.g. is 30 percent or less of household income) for more eligible households.

Table 4 also shows the *unadjusted* maximum affordable housing costs and associated rents (without the HUD adjustment factor) for Very-Low Income households. As detailed further below, these unadjusted rent levels must be incorporated into projects that are utilizing the State Density Bonus.

Table 4 Maximum Affordable Spending on Housing in Los Angeles County

Income Category & Household (HH) Size	% of AMI	Unadjusted Maximum Annual HH Income	Adjusted Maximum Annual HH Income [1]	Total Max Annual Spending on Housing [2]	Monthly Spending on Other Housing Costs [3]	Maximum Monthly Rent or Mortgage Payment [4]
Rental Units						
Very Low, 3-Person HH (unadjusted)	50%	$41,000	n/a	$12,300	$229	$796
Very Low, 3-Person HH	50%	$41,000	$53,600	$16,080	$229	$1,111
Low, 3-Person HH	80%	$65,600	$85,800	$25,740	$229	$1,916
For-Sale Units						
Moderate, 3-Person HH	110%	$90,200	$90,200	$27,060	$760	$1,495
Moderate, 4 Person HH	110%	$100,210	$100,210	$30,063	$810	$1,695

[1] HUD adjusts the maximum incomes for very-low and low-income households in Los Angeles County up by 130%. This type of adjustment is made in counties with unusually high or low household incomes, uneven housing cost-to-income ratios, or other considerations.
[2] Assumes a housing cost to income ratio of 30 percent.
[3] For rental units, other housing costs include utility expenditures consistent with the Los Angeles County Community Development Authority limits for a 2-bedroom unit (assumes use of electricity for heating and cooking). Utility costs effective July 2021. For for-sale units, other housing costs include insurance, taxes, and HOA fees. The assumptions are based on the applicable prototypes and are shown on Table 5.
[4] Maximum income available to pay for rent or mortgage after allowance for other housing costs.
Sources: Los Angeles County Community Development Authority; California Housing and Community Development; Economic & Planning Systems

Table 5 Sale Value Estimate for Prototype For-Sale Affordable Housing Units

Input Assumptions	Townhome with Attached Garage	4-Story Wood Frame Bulding
	Moderate Income (110% AMI)	
Prototype Unit Assumptions		
Number of Bedrooms	3	2
Number of Persons per Unit [1]	4	3
Maximum Supported Home Price		
Maximum Household Income [2]	$100,210	$90,200
Maximum Monthly Spending on Housing [3]	$2,505	$2,255
Other Housing Costs		
Insurance	$125	$125
Taxes [4]	$385	$335
HOA Fee	$300	$300
Maximum Monthly Mortgage Payment (after Other Housing Costs)	$1,695	$1,495
Mortgage Terms		
Down Payment	10%	10%
Interest Rate (annual)	4.00%	4.00%
Loan Term (months)	360	360
Total Supportable Unit Value [5]	**$395,000**	**$348,000**

[1] For this analysis, EPS has assumed an average unit for income-qualified worker households would be either 2 or 3 bedrooms. State law (Health and Safety Code Section 50052.5) indicates that a 2-bedroom unit should be assumed to be occupied by a 3-person household, and a 3-bedroom unit should be assumed to be occupied by a 4-person household.

[2] Based on 2022 income limits for Los Angeles County.

[3] Assumes housing costs to be 30% of gross household income. Maximum monthly payment for affordable units is inclusive of mortgage payment, insurance, and taxes.

[4] Taxes equal to approximately 1.1% of sale price.

[5] The total supportable unit value is equivalent to the down payment plus total mortgage amount, assuming a mortgage with terms for interest rate, term, and payment as shown in table.

Sources: Los Angeles County; California Housing and Community Development; and Economic & Planning Systems

Market-Rate Housing Revenue Assumptions

EPS used the following assumptions for determining the value of market-rate housing units:

- *Market Rate Sale Prices* - For the 1,650-square-foot townhome prototype, the estimated sale value is $860 per square foot, or $1,419,000 per unit. For the 1,200-square-foot condominium prototype, the estimated sale value is $800 per square foot, or $960,000 per unit. These values are based on EPS' review of data on home sales in South Pasadena.

- *Market-Rate Rents* – The rent for newly constructed, market-rate two-bedroom units is assumed to be $3,900, based on EPS research and input from local developers about recent underwriting assumptions.

- *Operating Costs (for Rental Units)* – The analysis assumes that multifamily rental apartment operators incur annual operating costs of $12,000 per unit. This amount is inclusive of the cost of management, maintenance, common utilities (those not paid by tenants), as well as property tax and insurance. The operating cost estimate is based on data collected by CoStar on operating expenses and taxes for newly-constructed residential projects built in communities proximate to South Pasadena.

Development Cost Assumptions

EPS used the following assumptions for determining the development costs associated with the prototype projects:

- *Land Costs* – EPS estimated a land acquisition cost of $3.3M per acre for Prototype 1 (for-sale townhomes) and $4.75M per acre for Protypes 2, 3, and 4 (for-sale condominium and multifamily rental apartment product types). These costs are based on data from recent land transactions in South Pasadena. The difference in land cost assumptions reflects the relatively lower value of land on which local zoning rules allow fewer units per acre to be developed.

- *Direct Costs* - EPS estimated per square foot direct costs (including material and labor) of $300 for Prototype 1 (for-sale townhomes) and $350 for Protypes 2, 3, and 4 (for-sale condominium and multifamily rental apartment product types). These costs were based on interviews with housing developers both within South Pasadena and the larger Los Angeles region, as well as data from Rider Levett Bucknall's (RLB) Construction Cost Indicator for the Los Angeles region.

- *Indirect Costs* - Indirect or "soft" costs include architecture, entitlement, fees, marketing, financing, and related costs. EPS assumed indirect costs would be equal to 18 percent of direct costs for all prototypes. This assumption was based on examples of project financial pro formas provided by area developers.

As stated earlier, these assumptions are representative of a typical or average project; the actual costs for a given project will vary by location and project design characteristics.

Return Metrics and Feasibility Thresholds

This analysis measured the threshold of feasibility using two standard return metrics used by real estate developers. These return metrics relate to the value of the investment in pursuing the project, and inform a developer's decision whether or not to pursue:

- For for-sale housing projects, the feasibility threshold is based on the return metric of "profit margin," calculated as the percentage by which total project value exceeds total project cost. Based on EPS research and experience, the analysis assumes that developers in the greater Los Angeles region will require a 15 percent or higher profit margin on for-sale development projects. So any project attaining a profit margin at or above 15 percent would be considered feasible.

- For rental housing projects, the feasibility threshold is based on the return metric of "yield on cost," calculated by dividing the annual net operating income (NOI) by the total costs of development. Based on EPS research and experience, the analysis assumes that developers in the greater Los Angeles region will require a yield on cost near to or exceeding 5.0 percent.

As stated earlier, these return metrics do not account for the time value of money and are not based on any assumption regarding project timeline.

Feasibility Findings

EPS used the revenue and cost assumptions detailed above to develop financial pro forma models for each prototype project. The pro forma models were constructed to assess the return metrics achieved for each project under the City's inclusionary housing requirements and identify the feasibility implications of the requirements.

Analysis of Base Prototypes

EPS first assessed the feasibility of the prototype projects with the inclusion of the required affordable units, but without incorporating any potential development incentives. The analysis for the for-sale prototypes are shown in **Table 6**, while the analysis for the rental prototypes are shown in **Table 7**.

As shown, the for-sale townhome prototype returns a profit margin of 39.1 percent, which is well above the typical target return of 15 percent. The for-sale, four-story condominium prototype returns a profit margin of 11.4 percent, which is below the target return of 15 percent and therefore would not be considered feasible.

On the rental side, the four-story rental prototype returns a yield on cost of 4.7 percent, and the five-story prototype returns a yield on cost of 4.9 percent. Both yields are below the target of 5.0 percent and therefore would not be considered feasible.

Table 6 Feasibility Analysis of IHO Ordinance for Prototype For-Sale Developments

		For Sale Property	
		Townhome with attached Garage	**4-Story Wood Frame Building**
	Input Assumptions		
Development Program Assumptions			
Acreage		0.50	0.91
Density/Acre		20	55
Base Unit Count		10	50
Total Required Affordable Units		2	10
Gross Unit Size		2,000	1,412
Net Unit Size [1]		1,650	1,200
Number of Bedrooms		3	2
Parking Spaces/Unit [2]		350 SF Attached Garage	2.00
Cost Assumptions			
Land/Acre [3]		$3,300,000	$4,750,000
Land Value (rounded)		$1,650,000	$4,318,000
Land/Unit		$165,000	$86,360
Direct Costs			
Construction Costs/SF [4]		$300	$350
Direct Construction Costs/Unit (rounded)		$600,000	$494,118
Basement Garage Parking Construction Cost/Unit	$35,000 /space		$70,000
Subtotal, Direct Costs/Unit		$600,000	$564,118
Indirect Costs/Unit (rounded) [5]	18% of direct costs	$108,000	$101,500
Total Cost/Unit (rounded)		$873,000	$751,978
Project Value			
Affordable For Sale Value per Unit [6]	per unit	$395,000	$348,000
Market Rate For Sale Value per Unit [7]		$1,419,000	$960,000
Total Project Value		$12,142,000	$41,880,000
Total Project Cost		$8,730,000	$37,598,882
Profit Margin [8]		**39.1%**	**11.4%**

[1] Gross Unit Size includes garage for townhomes and common areas for 4-story Wood Frame Building (assumed efficiency ratio of
[2] Parking assumptions in line with data from similar properties sold in South Pasadena July 2021 - June 2022 found on Zillow.
[3] Land value assumptions based on data from CoStar and local developers for projects of similar density.
[4] Costs based on EPS estimate and latest Construction Cost Index data for the Los Angeles area from Rider Levett Bucknall.
[5] Includes estimated costs for architecture and engineering; entitlement and fees; project management; appraisal and market study; marketing, commissions, and general administration; financing and charges; insurance; developer fee and contingency.
[6] See unit value estimate for for-sale affordable housing on Table 5.
[7] Based on similar property sales in South Pasadena July 2021 - June 2022 found on Zillow.
[8] Profit Margin is how much Total Project Value exceeds Total Project Cost and is a typical return metric used for for-sale developments.

Sources: Los Angeles County; California HCD; Zillow; Rider Levett Bucknall; and Economic & Planning Systems

Table 7 Feasibility Analysis of IHO Ordinance for Prototype Rental Developments

	Input Assumptions	*For Rent Property* **4-5 Stories Woodframe Multifamily Building with Garage Parking**	
Development Program Assumptions			
Acreage		0.55	0.57
Density/Acre		55	70
Base Unit Count		30	40
Very-Low Income (VLI) Units		3	4
Low-Income (LI) Units		3	4
Total Required Affordable Units		6	8
Gross Unit Size [1]		1,176	1,176
Net Unit Size		1,000	1,000
Number of Bedrooms		2	2
Parking Spaces/Unit [2]		1.00	1.00
Cost Assumptions			
Land/Acre [3]		$4,750,000	$4,750,000
Land Value (rounded)		$2,591,000	$2,714,000
Land/Unit		$86,367	$67,850
Direct Costs			
Construction Costs/SF		$350	$350
Direct Construction Costs/Unit (rounded) [4]		$411,800	$411,800
Basement Garage Parking Construction Cost/Unit	$35,000 /space	$35,000	$35,000
Subtotal, Direct Costs/Unit		$446,800	$446,800
Indirect Costs/Unit (rounded) [5]	18% of direct costs	$80,400	$80,400
Total Cost/Unit (rounded)		$613,567	$595,050
Project Value			
Revenue per Year per VLI Unit [6]		$13,332	$13,332
Revenue per Year per LI Unit [6]		$22,992	$22,992
Affordable Revenue per Year		$108,972	$145,296
MR Revenue per Year [7]	$3,900 /mo per unit	$1,123,200	$1,497,600
Operating Costs [8]	$12,000 /year per unit	($360,000)	($480,000)
Total NOI		$872,172	$1,162,896
Total Project Cost		$18,407,000	$23,802,000
Yield on Cost [11]		**4.7%**	**4.9%**

[1] Gross Unit Size includes common areas for 4-story Wood Frame Building (assumed efficiency ratio of 85%).
[2] Parking assumption is consistent with the City's density bonus requirements for projects including affordable housing units.
[3] Land value assumption based on data from CoStar and local developers for projects of similar density.
[4] Costs based on EPS estimate and latest Construction Cost Index data for the Los Angeles area from Rider Levett Bucknall.
[5] Includes estimated costs for architecture and engineering; entitlement and fees; project management; appraisal and market study; marketing, commissions, and general administration; financing and charges; insurance; developer fee and contingency.
[6] See affordable rents assumptions on Table 4.
[7] Based on CoStar data for similar 2BR apartments located in South Pasadena.
[8] Reflective of newly-constructed properties in communities proximate to South Pasadena, as reported by CoStar. Inclusive of management, maintenance, common utility, and property tax costs.
[9] Yield on cost is calculated as NOI divided by total development costs, and is a typical return metric used for rental real estate projects.
Sources: Los Angeles County; California HCD; CoStar; CBRE; Rider Levett Bucknall; and Economic & Planning Systems

Analysis Incorporating State Density Bonus Law

While three of the prototype projects are not considered feasible under the base scenario, developers will have the option to utilize incentives available under the State Density Bonus Law, which are available for any project in the state that incorporates affordable housing according to specific criteria. Therefore, EPS also considered the feasibility of the prototype projects under the assumption that each project incorporates these incentives – specifically, including additional "bonus" market-rate units. These are units that can be developed beyond the allowable maximum density for a particular site. The townhome prototype was excluded from this analysis since it was already deemed feasible under the base scenario.

Table 8 shows the feasibility analysis for the four-story, for-sale condominium prototype. Since this prototype includes 20 percent of its units at prices affordable to Moderate-Income households, it would qualify for a density bonus of 15 percent, or eight additional market-rate units. With these additional units, the profit margin for the prototype project would increase from 11.4 percent to 15.5 percent, which is above the typical target return of 15 percent and therefore meets the feasibility threshold under this analysis.

Table 9 shows the analysis for the two rental prototypes. In order for these projects to qualify for a density bonus, the affordable units would have to be made affordable at the *unadjusted* income levels discussed previously.[3] Additionally, the State Density Bonus Law only allows projects to take a bonus for affordable units in a single affordability category (e.g. either for the Low-Income units or the Very-Low Income units). Therefore, EPS assumed that a developer in South Pasadena would provide the required Very-Low Income units at the lower, unadjusted level of affordability, as the available bonus is greater than if the Low-Income units were provided at the unadjusted level of affordability. Under this scenario, the Low-Income units would be rented at the higher, adjusted levels of affordability. By providing the required ten percent of Very-Low Income units at the lower unadjusted rents, the prototype projects would qualify for a 32.5 percent density bonus. This equates to nine additional market-rate units for the four-story prototype and 13 additional market-rate units for the five-story prototype.

With the addition of the "bonus" market-rate units, the yield on cost for the two rental projects increases to 5.1 percent for the four-story project and 5.2 percent for the five-story project. These yields are greater than the 5.0 percent target and therefore meet the feasibility threshold under this analysis.

[3] Under State law, in determining eligibility for the state density bonus, the HUD adjustment factor for Low-Income and Very-Low Income limits is not applied.

Table 8 Feasibility Analysis for Prototype Rental Developments with State Density Bonus

		For Sale Property
		4-Story Wood Frame Building
	Input Assumptions	
Development Program Assumptions		
Acreage		0.91
Density/Acre		55
Base Unit Count		50
Total Required Affordable Units		10
% Units Moderate Income (For-Sale)		20.0%
State Density Bonus [1]		15.0%
Density Bonus Units		8
Total Built Units		58
Gross Unit Size		1,412
Net Unit Size [1]		1,200
Number of Bedrooms		2
Parking Spaces/Unit [2]		2.00
Cost Assumptions		
Land/Acre [3]		$4,750,000
Land Value (rounded)		$4,318,000
Land/Unit		$74,448
Direct Costs		
Construction Costs/SF [4]		$350
Direct Construction Costs/Unit (rounded)		$494,118
Basement Garage Parking Construction Cost/Unit	$35,000 /space	$70,000
Subtotal, Direct Costs/Unit		$564,118
Indirect Costs/Unit (rounded) [5]	18% of direct costs	$101,500
Total Cost/Unit (rounded)		$740,066
Project Value		
Affordable For Sale Value per Unit [6]	per unit	$348,000
Market Rate For Sale Value per Unit [7]		$960,000
Total Project Value		$49,560,000
Total Project Cost		$42,923,824
Profit Margin [8]		**15.5%**

[1] Gross Unit Size includes garage for townhomes and common areas for 4-story Wood Frame Building (assumed efficiency ratio of 85%).

[2] Parking assumptions in line with data from similar properties sold in South Pasadena July 2021 - June 2022 found on Zillow.

[3] Land value assumptions based on data from CoStar and local developers for projects of similar density.

[4] Costs based on EPS estimate and latest Construction Cost Index data for the Los Angeles area from Rider Levett Bucknall.

[5] Includes estimated costs for architecture and engineering; entitlement and fees; project management; appraisal and market study; marketing, commissions, and general administration; financing and charges; insurance; developer fee and contingency.

[6] See unit value estimate for for-sale affordable housing on Table 5.

[7] Based on similar property sales in South Pasadena July 2021 - June 2022 found on Zillow.

[8] Profit Margin is how much Total Project Value exceeds Total Project Cost and is a typical return metric used for for-sale developments.

Sources: Los Angeles County; California HCD; Zillow; Rider Levett Bucknall; and Economic & Planning Systems

Table 9 Feasibility Analysis for Prototype Rental Developments with State Density Bonus

	Input Assumptions	*For Rent Property* **4-5 Stories Woodframe Multifamily Building with Garage Parking**	
Development Program Assumptions			
Acreage		0.55	0.57
Base Density/Acre		55	70
Base Unit Count		30	40
Unadjusted Very-Low Income (VLI) Units [1]		3	4
Low-Income (LI) Units		3	4
Total Required Affordable Units		6	8
% Units Very-Low Income		10.0%	10.0%
State Density Bonus [2]		32.5%	32.5%
Density Bonus Units		9	13
Total Built Units		39	53
Gross Unit Size		1,176	1,176
Net Unit Size [3]		1,000	1,000
Number of Bedrooms		2	2
Parking Spaces/Unit [4]		1.00	1.00
Cost Assumptions			
Land/Acre [5]		$4,750,000	$4,750,000
Land Value (rounded)		$2,591,000	$2,714,000
Land/Unit		$66,436	$51,208
Direct Costs			
Construction Costs/SF [6]		$350	$350
Direct Construction Costs/Unit (rounded)		$411,800	$411,800
Basement Garage Parking Construction Cost/Unit	$35,000 /space	$35,000	$35,000
Subtotal, Direct Costs/Unit		$446,800	$446,800
Indirect Costs/Unit (rounded) [7]	18% of direct costs	$80,400	$80,400
Total Cost/Unit (rounded)		$593,636	$578,408
Project Value			
Revenue per Year per Unadjusted VLI Unit [8]		$9,552	$9,552
Revenue per Year per LI Unit [8]		$22,992	$22,992
Affordable Revenue per Year		$97,632	$130,176
MR Revenue per Year [9]	$3,900 /mo per unit	$1,544,400	$2,106,000
Operating Costs [10]	$12,000 /year per unit	($468,000)	($636,000)
Total NOI		$1,174,032	$1,600,176
Total Project Cost		$23,151,800	$30,655,600
Yield on Cost [11]		**5.1%**	**5.2%**

[1] State Density Bonus Law requires that qualifying units be set at unadjusted income affordability levels.
[2] Per State Density Bonus Law (California Government Code Sections 65915 – 65918).
[3] Gross Unit Size includes common areas for 4-story Wood Frame Building (assumed efficiency ratio of 85%).
[4] Parking assumption is consistent with the City's density bonus requirements for projects including affordable housing units.
[5] Land value assumption based on data from CoStar and local developers for projects of similar density.
[6] Costs based on EPS estimate and latest Construction Cost Index data for the Los Angeles area from Rider Levett Bucknall.
[7] Includes estimated costs for architecture and engineering; entitlement and fees; project management; appraisal and market study; marketing, commissions, and general administration; financing and charges; insurance; developer fee and contingency.
[8] See affordable rents assumptions on Table 4.
[9] Based on CoStar data for similar 2BR apartments located in South Pasadena.
[10] Reflective of newly-constructed properties in communities proximate to South Pasadena, as reported by CoStar. Inclusive of management, maintenance, common utility, and property tax costs.
[11] Yield on cost is calculated as NOI divided by total development costs, and is a typical return metric used for rental real estate
Sources: Los Angeles County; California HCD; CoStar; CBRE; Rider Levett Bucknall; and Economic & Planning Systems

ATTACHMENT 3
July 15, 2020 Staff Report

City Council Agenda Report

ITEM NO. _15_

DATE: July 15, 2020

FROM: Stephanie DeWolfe, City Manager

PREPARED BY: Joanna Hankamer, Planning & Community Development Director
Lucy Demirjian, Assistant to the City Manager

SUBJECT: **Consideration of Ballot Measures for the November 3, 2020 General Municipal Election**

Recommendation
It is recommended that the City Council consider three ballot measures for the General Municipal Election on Tuesday, November 3, 2020: 1) Renewal of the Utility Users' Tax, 2) Increase of building height limits in specified areas, and 3) Transient Occupancy Tax for short term rentals, hotels and lodging; and advise staff which potential ballot measures to prepare for the November 3, 2020 General Municipal Election.

Executive Summary
With the economic uncertainties resulting from the COVID-19 pandemic, the City will face significant financial challenges in the coming years. Additionally, the City's UUT is set to expire on June 30, 2022 furthering the impacts to the City's budget. As the City explores ways to manage its resources in the midst of a pandemic, this revenue source continues to be critical to delivery of core city services, including public safety, fire and paramedic services, youth and senior services, library and maintenance of streets and parks. The renewal of the UUT is essential to the City's financial sustainability and to preserve critical core services.

Additionally, the City must take time-sensitive steps this fall toward adopting a Housing Element with a combination of policy tools to meet its state-mandated Regional Housing Needs Assessment (RHNA) obligations. The City is legally required to accommodate 2,062 new housing units within the next eight years and must adopt a Housing Element demonstrating such policies by October 2021. The City's housing consultant is currently working with staff to determine how many new housing units can be accommodated within the regulations proposed in the draft General Plan (GP) and Downtown Specific Plan (DTSP). If the total of 2,062 units cannot be accommodated within those regulations, which it appears they cannot, the City will have to adopt new regulations that allow for the balance of the units required to meet RHNA. Staff will be exploring all planning tools for accommodating extra units to bring the City into compliance with State law. The ability to allow a height increase in certain areas where it may be appropriate is one of only a few tools available to satisfy the RHNA requirement; precluding the use of this tool will limit the City's ability to avoid other less desirable alternatives.

Timing is critical in providing the community and City Council with options to accommodate these additional housing units. A limited height increase ballot measure should be designed and considered, among other housing-production tools, to meet RHNA requirements. Staff will be conducting community outreach the week of July 14 and will hold a Special Meeting of the Planning Commission July 21, 2020 to receive feedback from the community and commission regarding the Sites Analysis and preferences for where and how the 45' limit could be modified specifically to address the RHNA obligations.

Based on feedback from community and Planning Commissioners, staff will make a recommendation to City Council on August 5th regarding a potential height limit increase and its expected effectiveness toward meeting the City's RHNA obligation. August 5th is the deadline for City Council to place a ballot measure on the ballot for the November 3, 2020 election and is therefore the last opportunity for the City to consider a targeted height increase as one of the tools available to help the City meet its current RHNA obligations.

Lastly, a non-competing ballot measure for consideration is the Transient Occupancy Tax (TOT), which is charged for hotel rooms and other short term rentals. Prior to the Covid-19 outbreak, the City and other neighboring cities saw an increase in demand for short term rentals with the proliferation of platforms such as Airbnb, VRBO, Home-Away and FlipKey. Although the City currently prohibits short term rentals, there is an opportunity to regulate them in order to provide homeowners the ability to rent them for additional income. The TOT is typically 12-14% of the rent charged to transient guests, and would apply to both short term rentals, should they be legalized, and hotel rooms. There are currently no hotels in the City, so if passed by the voters, this tax would impact any future hotels should one be approved in South Pasadena. If short term rentals were to be permitted in the future, an ordinance change and public hearing at both the Planning Commission and City Council would be required.

Discussion/Analysis

Utility Users Tax

The City's Utility Users Tax (UUT) is the second largest revenue source ($3.4 million) or 12% of the General Fund. The UUT will sunset in 2022 unless renewed by voters on the ballot in 2020. The loss of these dollars, combined with the continuing loss in revenue from the pandemic, would disable the City. If revenues remain at current levels in future years and are compounded by the loss of the UUT, total loss to the City would be more than 23% of the City's operating budget. With more than 50% of the annual budget allocated to fire and paramedic services and public safety, the remaining budget would not be sufficient for the City to comply with State mandates for core operations such as finance, planning, and public works.

Residents of South Pasadena currently pay a UUT for water, gas, electricity, telephone and cable television service. The current rate is 7.5%. The UUT is a general tax, where revenues are paid into the City's General Fund. General Fund revenues are budgeted by the City Council annually for general City services, such as police and fire protection, 9-1-1 emergency response, paramedics, parks, libraries, youth and senior programs and street maintenance and repairs.

UUT is a locally controlled tax, with 100% of the tax revenue retained by the City. Property taxes, in comparison, are controlled by the County and only 24% of what is collected from South Pasadena is received by the City. UUT tax revenue can also be used to support all government programs, it is not restricted to particular uses.

The City of South Pasadena is one of fewer than 25% of California cities that provide a full range of municipal services within their boundaries, including police, fire, library, streets, and parks and recreation. UUT revenue helps the City pay for local services rather than rely on other agencies to provide these services.

In placing the measure on the ballot, the Council must also determine if the tax should be renewed for a specific time frame, such as seven or ten years, or if it should remain in place until the voters choose to repeal it. Experience from other agencies indicates that voters prefer tax measures that remain in place with voter control, rather than short term sunset dates that require ongoing ballot measures. Further, the Council can consider an increase to the tax rate above the current 7.5%. In other cities, the UUT rate is as high as 10%. For each 0.5% increase in tax rate, approximately $225,000 would be generated to the General Fund.

Building Height Limits

In 1983, a voter initiative established that no commercial, office, manufacturing, or residential building in South Pasadena shall exceed a height of 45 feet, and no Conditional Use Permit or Variance shall be granted to exceed 45 feet. The current Zoning Code states that Residential Estates, Residential Single Family, and Residential Medium Density properties cannot exceed 35 feet. Residential High Density and Commercial properties cannot exceed 45 feet. Currently, the only way to exceed the local height limits is through the California State Density Bonus Law which allows up to a 35 percent increase in density, including the height to accommodate such density, depending on the amount of affordable housing that is provided.

The California State Density Bonus Law has been effective in incentivizing the production of more affordable units within the state, but the law limits a local jurisdiction's ability to regulate the design of such projects. Alternatively, South Pasadena may want to incentivize housing development through strategically located and modest height limit increases, possibly associated with an Inclusionary Housing Policy, to compete with the use of a State Density Bonus and therefore maintain local control over the design of larger housing projects. However, in order to change the height restriction established by the 1983 voter initiative, even if for a minimal height increase in a limited area of the City, the City would need to place a measure on the ballot, and the measure would need to pass with a majority of votes.

In accordance with State law, the City is required to update its Housing Element of the General Plan every eight years with new housing units that must be planned for within the city. For the 6th Cycle of the Regional Housing Needs Assessment (RHNA), the State and Southern California Association of Governments allocated 2,062 housing units to the City of South Pasadena; and while the number of required units may still be revised downward due to budgetary and political pressures from cities like South Pasadena, the decrease is not anticipated to be much. The new RHNA allocation is significantly higher than previous years (over 3,000

percent increase from the previous RHNA allocation) and accommodating over 2,000 units will be the greatest challenge for the Housing Element Update planning effort. The current 6th cycle of the Housing Element Update is due by October 15, 2021.

The City kicked off the Housing Element Update with two public workshops (May 30 and June 2), and engaged the community in discussions of how to accommodate over 2,000 state-mandated housing units, and introduced numerous strategies including concentrating new housing units in limited areas, and/or spreading the units across the city. It is recommended to consider a minimal height increase in certain areas of the city – restricted to residential uses only and resulting in buildings only one or two stories higher than what is currently allowed – in order to meet the RHNA requirement. Proposed new height limits and locations would be specified in the ballot language, making it clear what voters are voting for or against.

Transient Occupancy Tax

Commonly known as a "bed tax" or "hotel tax," a Transient Occupancy Tax (TOT) is a tax of 12-14% of the rent charged to transient guests (staying less than 30 days); a TOT would also be applicable to properties rented through home sharing services like Airbnb—a use which is presently prohibited in South Pasadena. A TOT would need to be placed on the ballot for approval by residents. TOTs are levied by most cities including Pasadena and Los Angeles. Approval of a TOT would not constitute approval or legalization of short-term rentals, such as Airbnb.

Last year, in anticipation of community conversation regarding potential revenue enhancement measures, staff assembled a list of frequently discussed options. During the months of March and April 2019, seven meetings were held with residents and three with staff to present the budget forecast and obtain feedback on potential solutions. The options presented to residents included land use considerations and potential new taxes.

The survey queried response to a sales tax measure (Measure A), which was later polled and ultimately placed on the November 2019 ballot. Among the other options presented to the community, development of a small hotel and implementation of a TOT scored the highest, with over 83% support. The revenue to the City from a hotel would include sales tax on restaurant and bar services, plus the revenue from the hotel tax (or bed tax). Although it is unclear how the economy will recover after the crisis and what the market will look like to attract interested development, establishing a hotel tax would better prepare the city should these opportunities arise.

Furthermore, the bed tax could also be applied to short-term rentals of housing units for durations less than 30-days. The legalization and taxation of short-term rentals was another popular new revenue option in the 2019 budget survey, with 71% support. Short-term rentals are currently prohibited in South Pasadena, however as with most cities who chose to prohibit them, they proliferate anyway. Rather than enforce against them, many cities have chosen instead to regulate and tax them, allowing potential negative impacts to be mitigated through Zoning Code requirements, as well as generating revenue to the city. Staff has estimated there may be more than 50 sites in South Pasadena based on a search of just one site like AirBnB. Although due to

the immediate crisis these activities have decreased, the ability to legally rent rooms on a short-term basis is desirable for many property owners who could benefit from the additional income during difficult economic times. It is difficult to estimate annual revenue from the TOT without knowing how the hospitality industry will recover. If a hotel were to be developed in the future, the hotel tax could generate close to an additional $1 million, depending on the room rate and number of rooms, once rates and occupancy reach peak.

Background
The November 3, 2020 special municipal election for the City of South Pasadena will be a consolidated election with the County of Los Angeles. The City Council must call and give notice to the regular municipal election for the purposes of placing a sales tax measure on the ballot. The deadline to add a measure to the ballot is August 7; the City Council has a scheduled meeting on August 5.

Alternatives
The Council could choose to defer placing the TOT measure on a subsequent ballot since there is currently no pressing need. However, the other two items are time sensitive. The next General Municipal Election is scheduled for November 2022, which would be too late for the height limit to be factored in the Housing Element due in October of 2021. Further, the UUT will expire on June 20, 2022, several months prior to the next election.

Next Steps
1. With City Council direction, staff will work with the City Attorney's office to draft a resolution with language for the applicable ballot measure for adoption at the next City Council meeting, August 5, 2020.
2. Once the resolution is adopted, staff will forward fully executed copies to the Los Angeles County Registrar of Voters.
3. The Notice of Election will be published in the South Pasadena Review along with the required languages of Korean, Spanish, and Chinese in The Korea Times, La Opinion, and World Journal.
4. If the voters approve the measure, staff will bring back ordinances to clean up the municipal code related to the elected city clerk office.

Legal Review
The City Attorney has reviewed this item.

Fiscal Impact
The Los Angeles County Registrar-Recorder/County Clerk will provide a cost estimate for the election, which is contingent upon the number of measures from participating jurisdictions. The elections budget, account number 101-1020-1022-8170, does include funds for the purpose of the General Municipal Election on November 3, 2020 in the proposed FY 2020-21 budget.

Environmental Analysis
This item is exempt from any California Environmental Quality Act (CEQA) analysis.

Public Notification of Agenda Item
The public was made aware that this item was to be considered this evening by virtue of its inclusion on the legally publicly noticed agenda, posting of the same agenda and reports on the City's website and/or notice in the *South Pasadena Review* and/or the *Pasadena Star-News*.