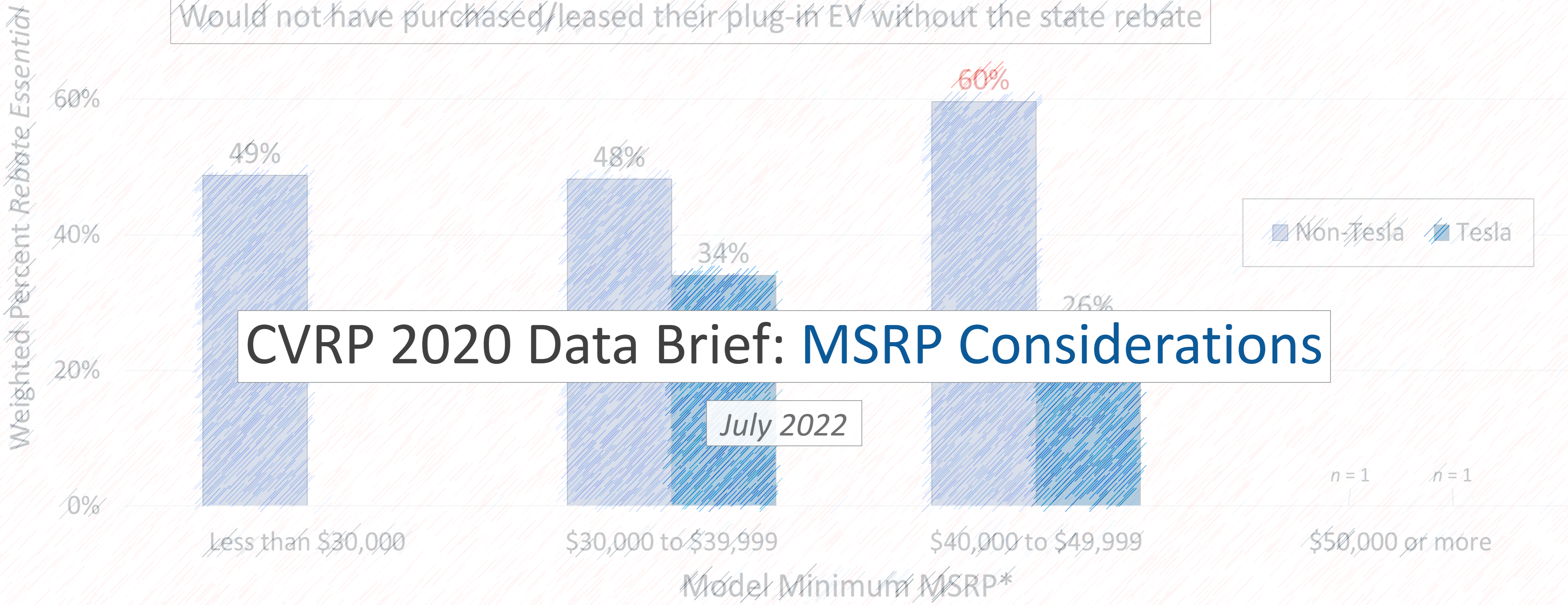


Would not have purchased/leased their plug-in EV without the state rebate



Brett Williams, PhD – Principal Advisor, EV Programs, CSE

Nicholas Pallonetti – Research Analyst, CSE

with thanks to J. Bowers and others at the Center for Sustainable Energy (CSE)



State EV Rebate Programs Administered by CSE (as of 7/6/2021)



Fuel-Cell EVs	\$4,500 (+2,500*)	\$2,500	\$7,500 (+\$2,000*)	≥ 200 e-miles [†] : \$2,000 ≥ 40 e-miles: \$1,000 < 40 e-miles: \$500 Base MSRP > \$42k: \$500	≥ 10 kWh: \$2,500 (+\$2,500*) < 10 kWh: \$1,500 (+\$2,500*)	--
All-Battery EVs	\$2,000 (+2,500*)	\$2,500	\$2,250 (+\$2,000*)			\$25/e-mile [†] : \$2,000 max for MSRP < \$55k; \$5,000 max for MSRP < \$45k
Plug-in Hybrid EVs	BEVx = \$2,000 Others = \$1,000 (+\$2,500*)	BEVx = \$2,500 Others = \$1,500	\$750 (+\$1,500*)			
Zero-Emission Motorcycles	\$750	--	--	--	\$750 (and NEVs)	--
Program Design Elements	* Rebate adder: income-qualified	--	* Rebate adder: qualified by proxy	--	* Rebate adder: income-qualified	--
	--	--	Point-of-sale option	Point-of-sale	Point-of-sale option	Point-of-sale
	Base MSRP: - PEVs ≤ \$60k	Purchase price ≤ \$50k	Base MSRP: - FCEVs ≤ \$60k - PEVs ≤ \$42k	Base MSRP > \$42k = \$500	Base MSRP < \$50k	Trim-specific MSRP < \$55k
	≥ 30 e-miles [†]	≥ 25 e-miles [†]	--	--	--	--
	Income cap	--	<ul style="list-style-type: none"> Used EV program (\$7.5k/\$3k/\$1.125k) \$125/\$75 dealer sales incentive 	--	Used EVs also qualify	--

BEVx = range-extended battery electric vehicle (BMW i3 REx). NEV = Neighborhood EV. Electric miles (e-miles) are U.S.-EPA-rated all-electric miles.

Outline: MSRP Considerations (during the onset of COVID-19)



- I. Context: MSRP-Based Vehicle Eligibility Criteria
- II. Program Outputs: Vehicles Rebated by MSRP
- III. Program Impacts: Rebate Influence by MSRP
- IV. Conclusions: Summary & Select Findings

Additional Resources

EVs = light-duty plug-in hybrid, battery, and fuel-cell electric vehicles
(PHEVs, BEVx vehicles, BEVs, and FCEVs)

Select Additional Resources: MSRP Considerations

(Reverse Chronological, as of 6/2022)



- [CVRP 2020 Data Brief: Incentive Influence](#)
- [Data from Statewide Electric Vehicle Rebate Programs: Vehicles, Consumers, Impacts, and Effectiveness](#)
- [CVRP 2019 Data Brief: MSRP Considerations](#)
- [EV Purchase Incentives: Program Design, Outputs, and Outcomes of Four Statewide Programs with a Focus on Massachusetts](#)
- [Electric Vehicle Incentives and Policies](#)
- [Proposed FY 2019–20 Funding Plan: Final CVRP Supporting Analysis](#)
- [CVRP: Data and Analysis Update](#)
- [Electric Vehicle Rebates: Exploring Indicators of Impact in Four States](#)
- [Electric Vehicle Rebates in Massachusetts: Status & Sustainability](#)
- [Supporting EV Commercialization with Rebates: Statewide Programs, Vehicle & Consumer Data, and Select Findings](#)
- Yale Webinar: [“Supporting EV Commercialization with Rebates: Statewide Programs, Vehicle & Consumer Data, and Findings,”](#) 58 minutes. [Slides](#).
- [Electric Vehicle Rebates in Disadvantaged Communities: Evaluating Progress with Appropriate Comparisons](#)








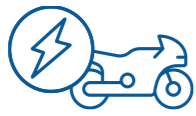
A close-up photograph of a person's hand plugging a charging cable into the charging port of a light-colored electric vehicle. The scene is set outdoors at sunset, with warm, golden light and lens flare effects. In the background, a public charging station with multiple orange charging cables is visible, along with a blurred city street scene.

Context

MSRP-Based Vehicle Eligibility Criteria

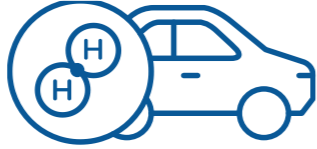
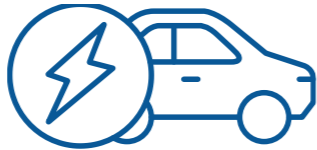

State EV Rebate Programs Administered by CSE

(as of 12/3/2019)

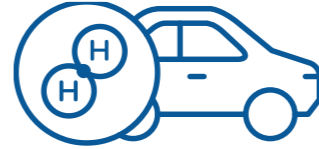
					Oregon CVRP
Fuel-Cell EVs 	\$4,500	\$1,500	\$5,000		
All-Battery EVs 	\$2,000	\$1,500	≥ 200 e-miles \$1,500 < 200 e-miles \$500	≥ 120 e-miles \$2,000 ≥ 40 e-miles \$1,700 ≥ 20 e-miles \$1,100 < 20 e-miles \$500	≥ 10 kWh \$2,500 < 10 kWh \$1,500
Plug-in Hybrid EVs 	BEVx: \$2,000 \$1,000	BEVx only: \$1,500	\$500		
Zero-Emission Motorcycles 	\$750	\$450	--	--	\$750 (and NEVs)
Program Design Elements	<ul style="list-style-type: none"> • Base MSRP ≤\$60k (except fuel-cell EVs) • ≥35 UDDS e-miles • Income cap • Increased rebates for lower-income households (+\$2,500) 	<ul style="list-style-type: none"> • Purchase price ≤\$50k • No fleet rebates (Program ended 9/30/19, restarted 1/1/20)	<ul style="list-style-type: none"> • BEVs & PHEVs ≤\$42k base MSRP, FCEVs ≤\$60k • Point-of-sale option • \$125/\$75 dealer incentive 	<ul style="list-style-type: none"> • Base MSRP >\$60k = \$500 • Point-of-sale 	<ul style="list-style-type: none"> • Base MSRP <\$50k • Point-of-sale option • Increased rebates for lower-income households (+\$2,500), used EVs also

Current MSRP Cap for Cars is Lower Than In 2020

as of Dec. 2019

Fuel-Cell EVs 	No MSRP cap
Battery EVs 	Base MSRP ≤\$60k
Plug-in Hybrid EVs 	

as of Feb. 2022

Fuel-Cell EVs 	No MSRP cap
Large Vehicles*	Base MSRP ≤\$60k
Cars**	Base MSRP ≤\$45k

* Includes minivans, pickups, and SUVs, based on EPA class.

** All other light-duty vehicle classes (e.g.; hatchbacks, sedans, wagons, and two-seaters)

A close-up photograph of a person's hand plugging a charging cable into the port of an electric vehicle. The scene is set outdoors at sunset, with warm, golden light and lens flare effects. In the background, a public charging station with multiple orange charging cables is visible, along with a blurred city street and buildings.

Vehicles Rebated by MSRP

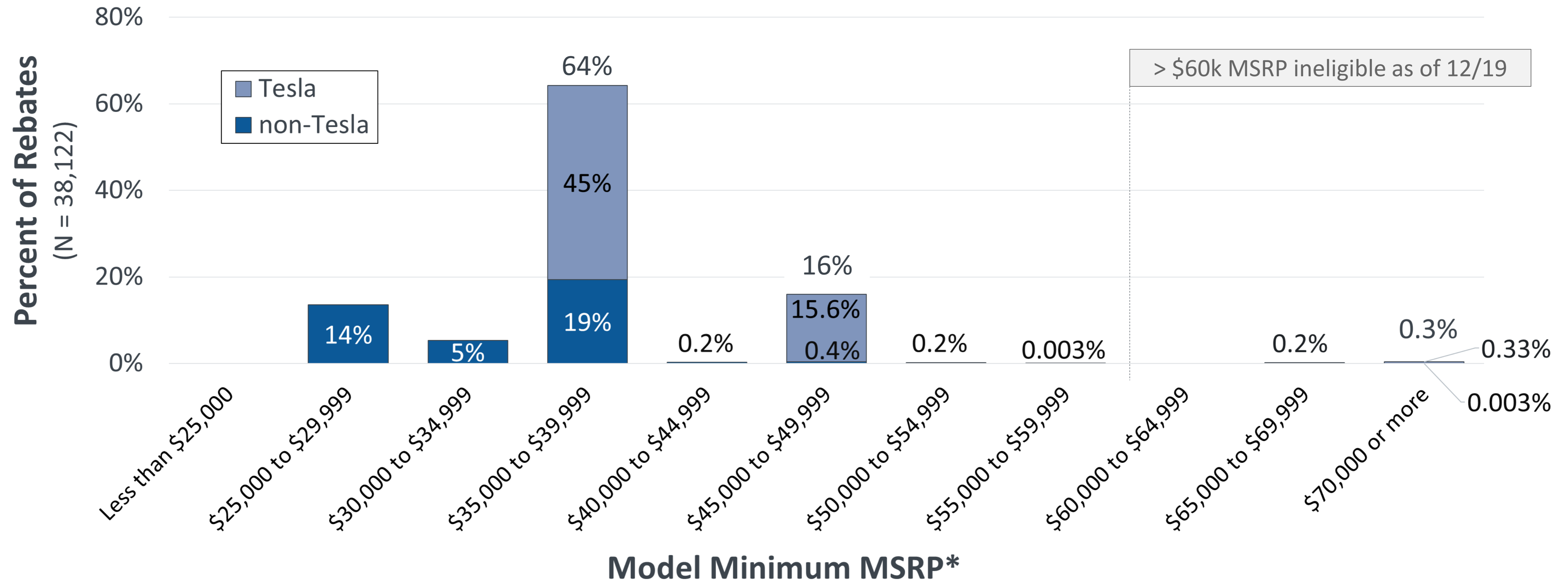
(during the onset of COVID-19)

Moderately-Priced Vehicles Receive Most Rebates

MY 2020



Rebated MY 2020 Plug-in Electric Vehicles (Purchased/Leased 12/2018–7/2021)

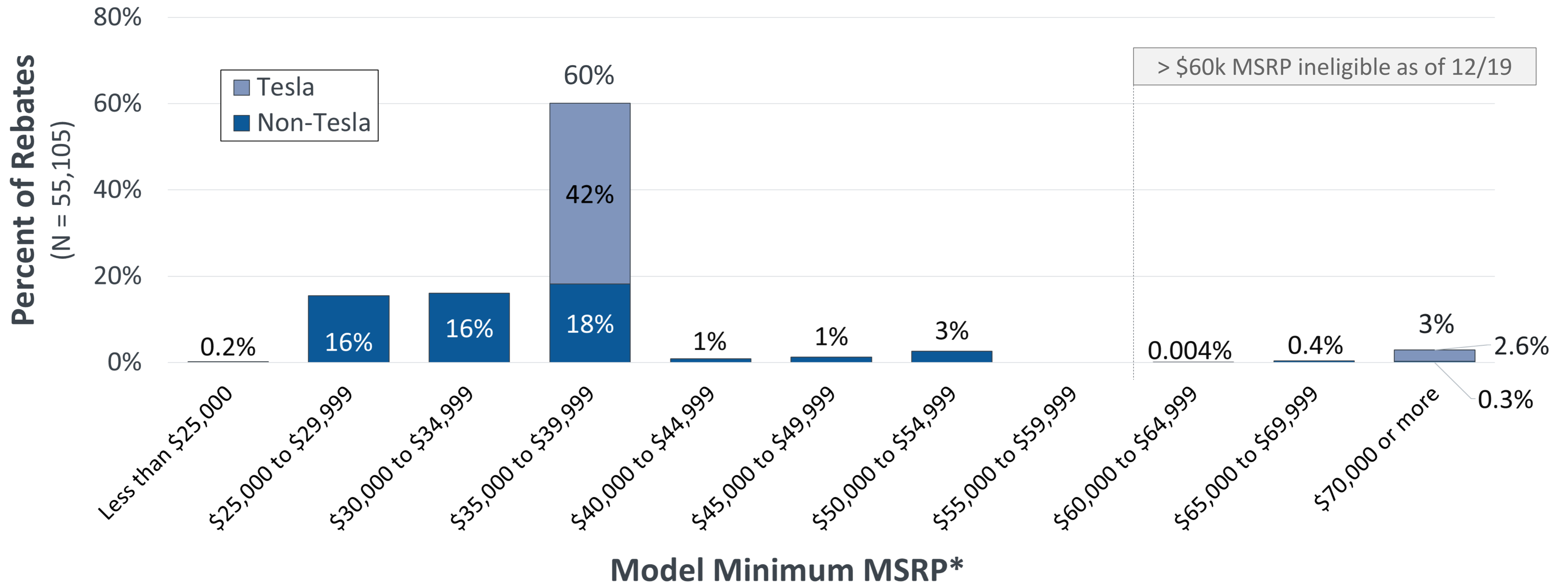


*Does not reflect sales price:
 Each vehicle was assigned the minimum Manufacturer's Suggested Retail Price (MSRP) for that model/MY on fueleconomy.gov. Where MY 2020 MSRPs were unavailable, MY 2019 MSRPs were used. Tesla MSRPs do change mid-MY: Model 3's were assigned an MSRP of \$35k and Model Y's were assigned an MSRP of \$48k.

Moderately-Priced Vehicles Receive Most Rebates

MY 2019

Rebated MY 2019 Plug-in Electric Vehicles (Purchased/Leased 1/2018–1/2021)



*Does not reflect sales price:

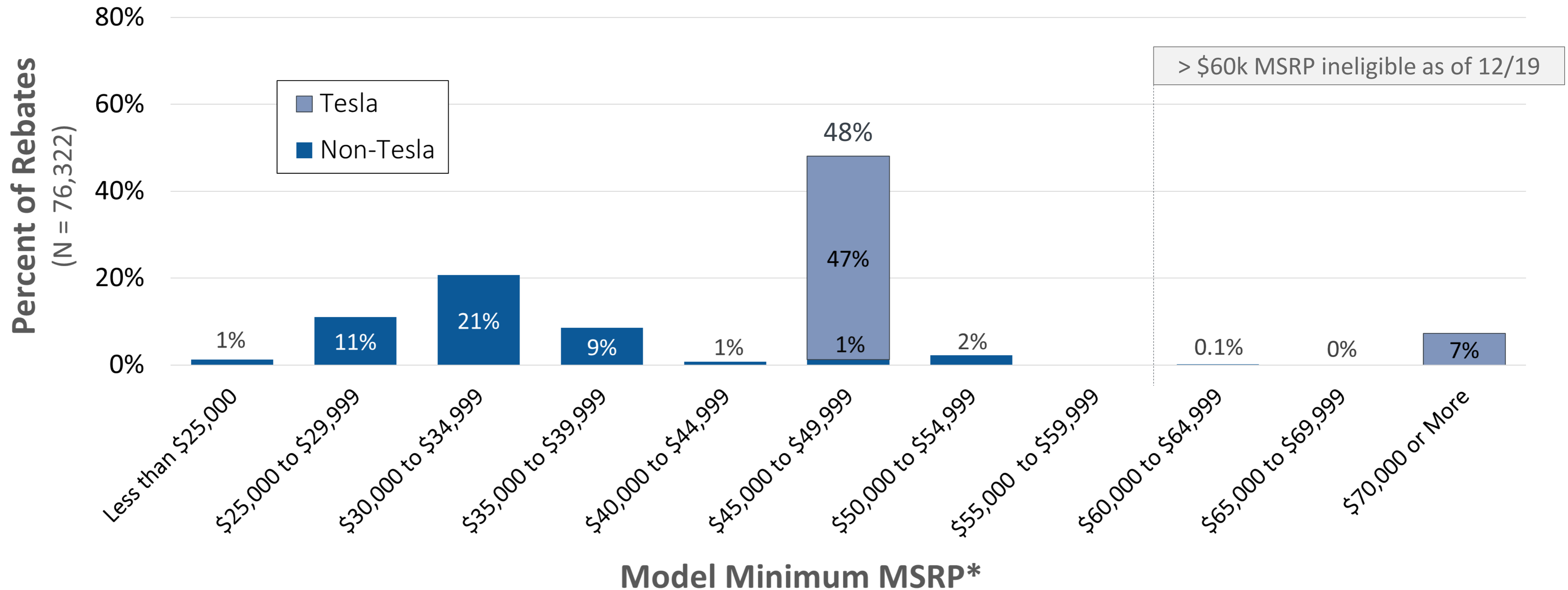
Each vehicle was assigned the minimum Manufacturer's Suggested Retail Price (MSRP) for that model/MY on fueleconomy.gov. Tesla Model 3's were assigned an MSRP of \$35k. Where MY 2019 MSRPs were unavailable, MY '18 MSRPs were used.

Moderately-Priced Vehicles Receive Most Rebates (especially non-Tesla)

MY 2018



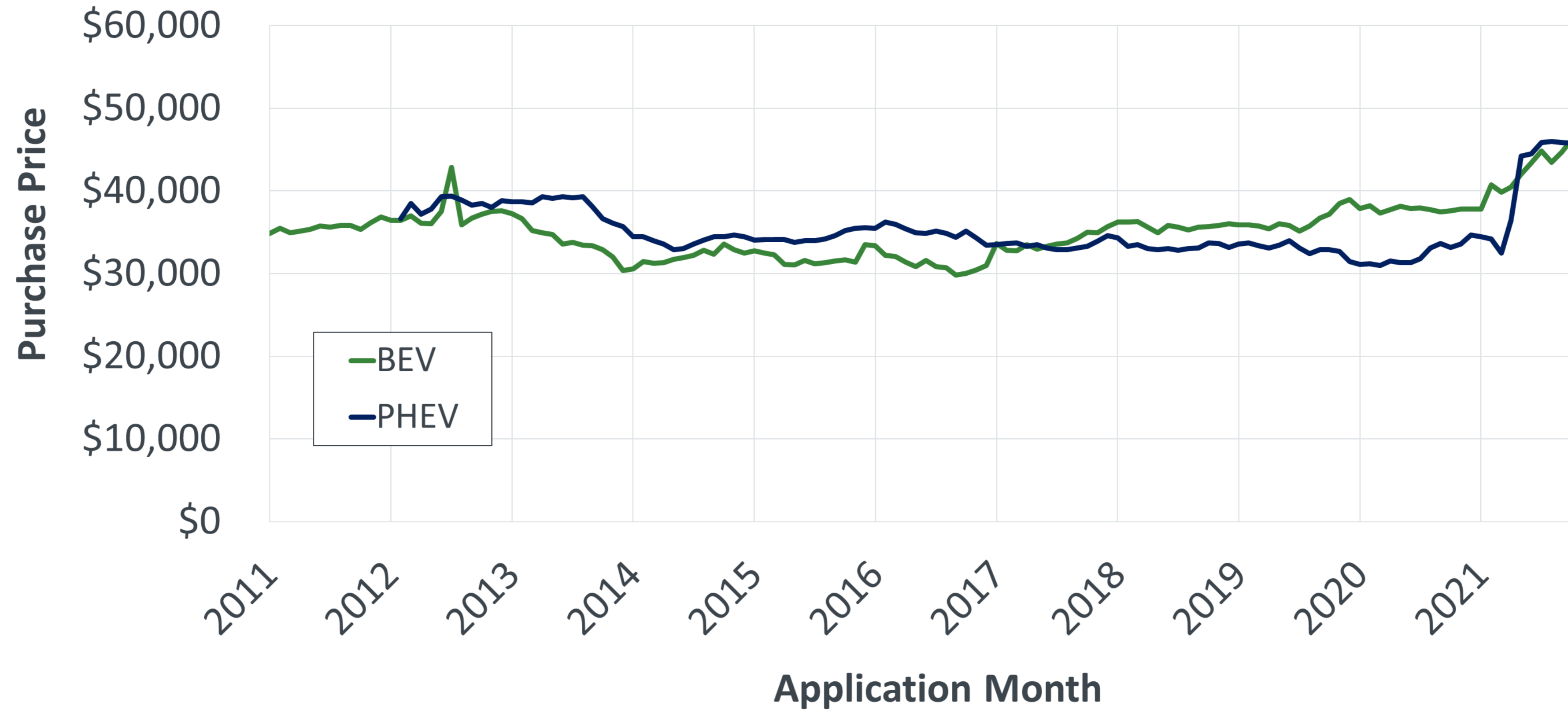
Rebated MY 2018 Plug-in Electric Vehicles (Purchased/Leased 1/2017–4/2020)



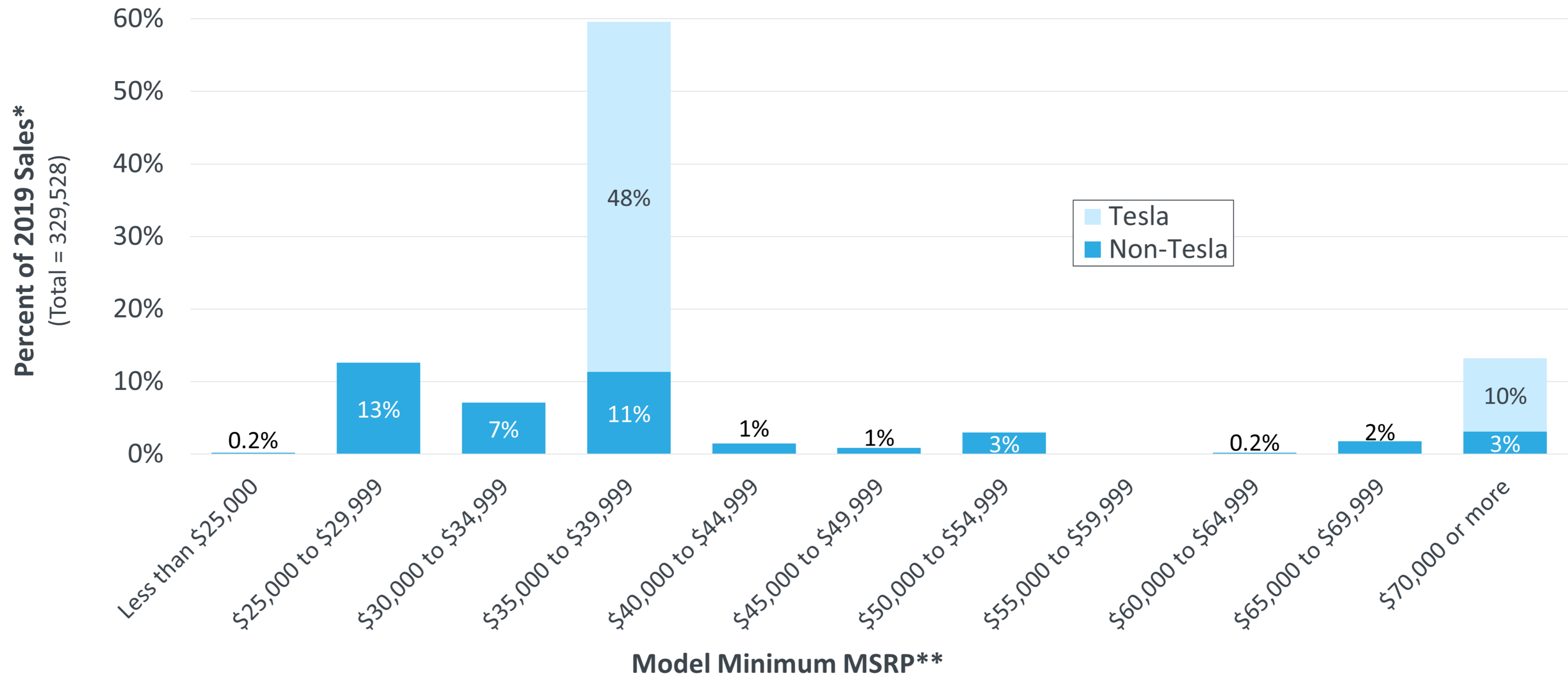
*Each vehicle was assigned the minimum Manufacturer’s Suggested Retail Price (MSRP) for that model on fueleconomy.gov and does not reflect sale price. Where MY 2018 MSRPs were unavailable, MY’17 MSRPs (Chevrolet Volt & Bolt EV) or MY’19 MSRP (Kia Soul EV) were used. All Tesla Model 3’s were assigned an MSRP of \$49k (that of the predominantly available model variant at the time, the Long Range).

Decreasing Manufacturing Costs Don't Always Mean Decreasing Retail Prices

Average Purchase Price of Rebated non-Tesla Vehicles (as of 3/2022)



U.S. 2019 Plug-in EV Sales by Model Minimum MSRP



* Calendar-year 2019 sales are from InsideEVs.com

** Each vehicle was assigned the minimum MSRP for that model on fueleconomy.gov, which does not reflect sale price. Where MY 2019 MSRPs were unavailable, MY'20 MSRP (one model), MY'18 MSRPs (six models) or MY'17 MSRPs (two models) were used. For example: All Tesla Model 3's were assigned an MSRP of \$35k (Standard Range); Tesla Model S and Model X models were assigned MSRPs of \$76k and \$82k, respectively (75D versions). BMW i3 variants (including REx) were assigned \$44,450k, Nissan LEAF variants were assigned \$29,990 (40-kWh), and smart ED variants were assigned \$23,900.

A close-up photograph of a person's hand plugging a charging cable into the port of an electric vehicle. The scene is set outdoors at sunset, with warm, golden light and lens flare effects. The background is slightly blurred, showing a parking area with other vehicles and buildings.

Rebate Influence by MSRP

(during the onset of COVID-19)

CVRP Consumer Survey Data Used

(shows rebates to individuals for plug-in EVs only)

	2017–2020 Edition	2019 purchases/ leases subset	“2020” purchases/ leases subset
Vehicle Purchase/ Lease Dates	June 2017 – Nov.* 2020	Jan. 2019 – Dec. 2019	Jan. 2020 – Nov.* 2020
Survey Responses (total <i>n</i>)	32,524**	8,991	4,331**
Program Population (<i>N</i>)***	193,200	61,300 (filtered subset of weighted Edition)	26,500

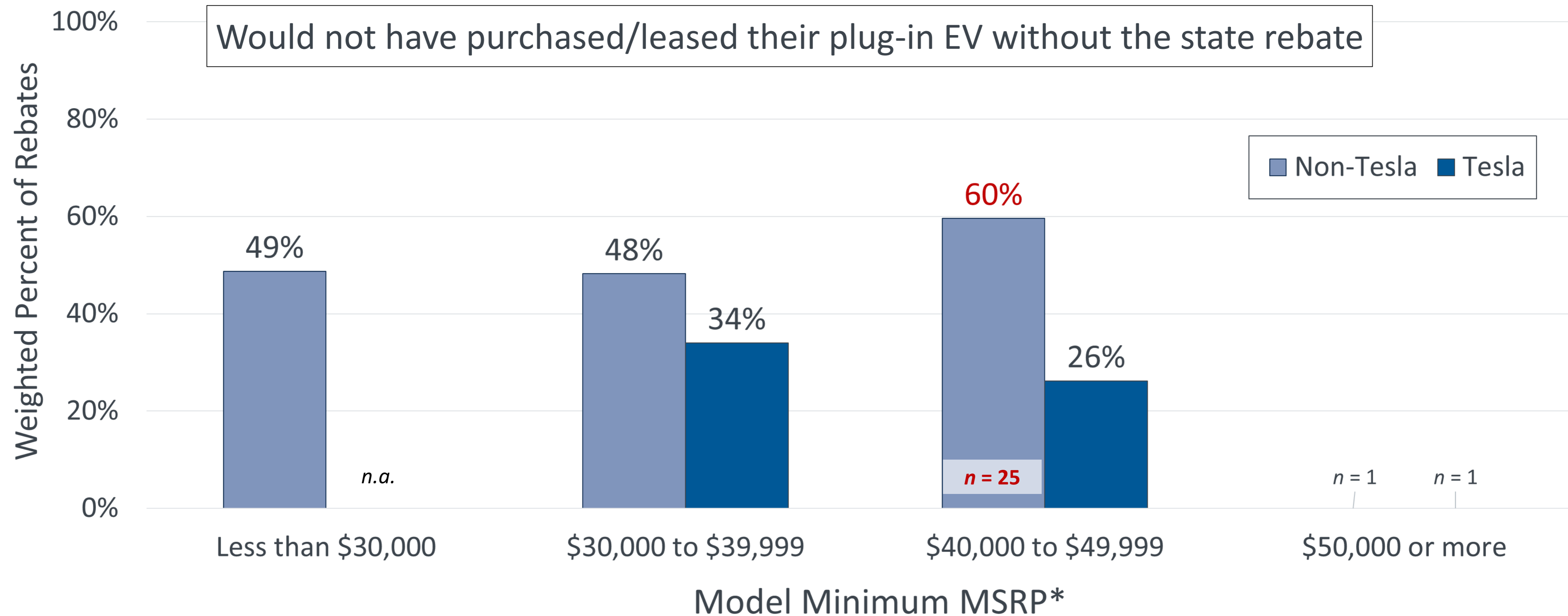
** ~8k 2020 purchases/leases were invited to respond to a new survey edition and are not represented in these data.*

** Subsequently weighted to represent the program population along the dimensions of vehicle category, vehicle model, buy vs. lease, and county. Weighting for the 2017–20 Edition also included year of purchase/lease. The 2020 subset was also independently weighted, producing only minor differences compared to the filtering approach.

*** Small numbers of rebated vehicles are not represented in the time frames due to application lags. Rounded to nearest 100.

Rebate Essentiality by MSRP Decreases for Tesla

2020 purchases/leases

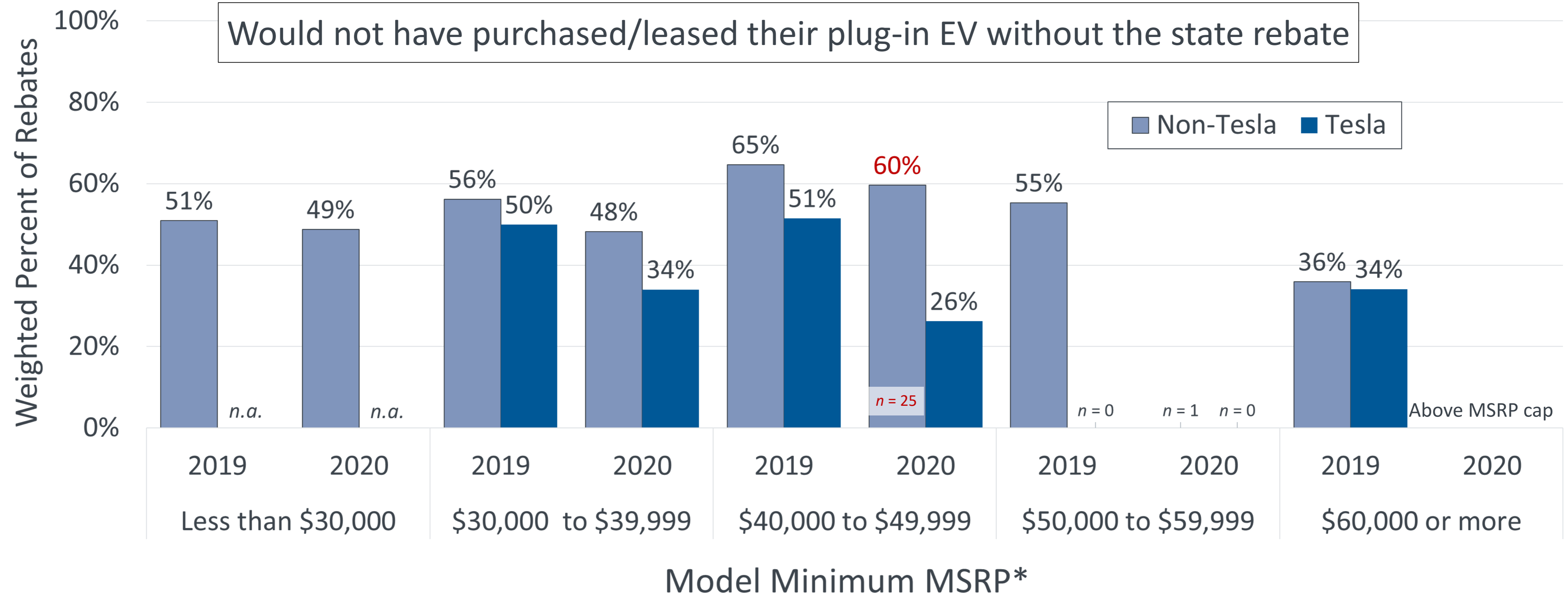


CVRP Consumer Survey, 2017–2020 Edition. Filtered, question-specific n = 4,304.

* Each vehicle was assigned the minimum Manufacturer’s Suggested Retail Price (MSRP) for that model/MY on fueleconomy.gov and does not reflect sale price. Where MSRPs were unavailable for a given MY, MSRPs from the previous or following MY were used. Tesla MSRPs do change mid-MY; Model 3’s were assigned an MSRP of \$49k for MY 2018, \$35k for MY 2019 and 2020, and \$39,990 for MY 2021. Model Y’s were assigned an MSRP of \$48k for MY 2020 and \$39,990 for MY 2021.

Rebate Essentiality by MSRP Decreased in 2020, Particularly for Tesla

2019 (updated) & 2020 purchases/leases

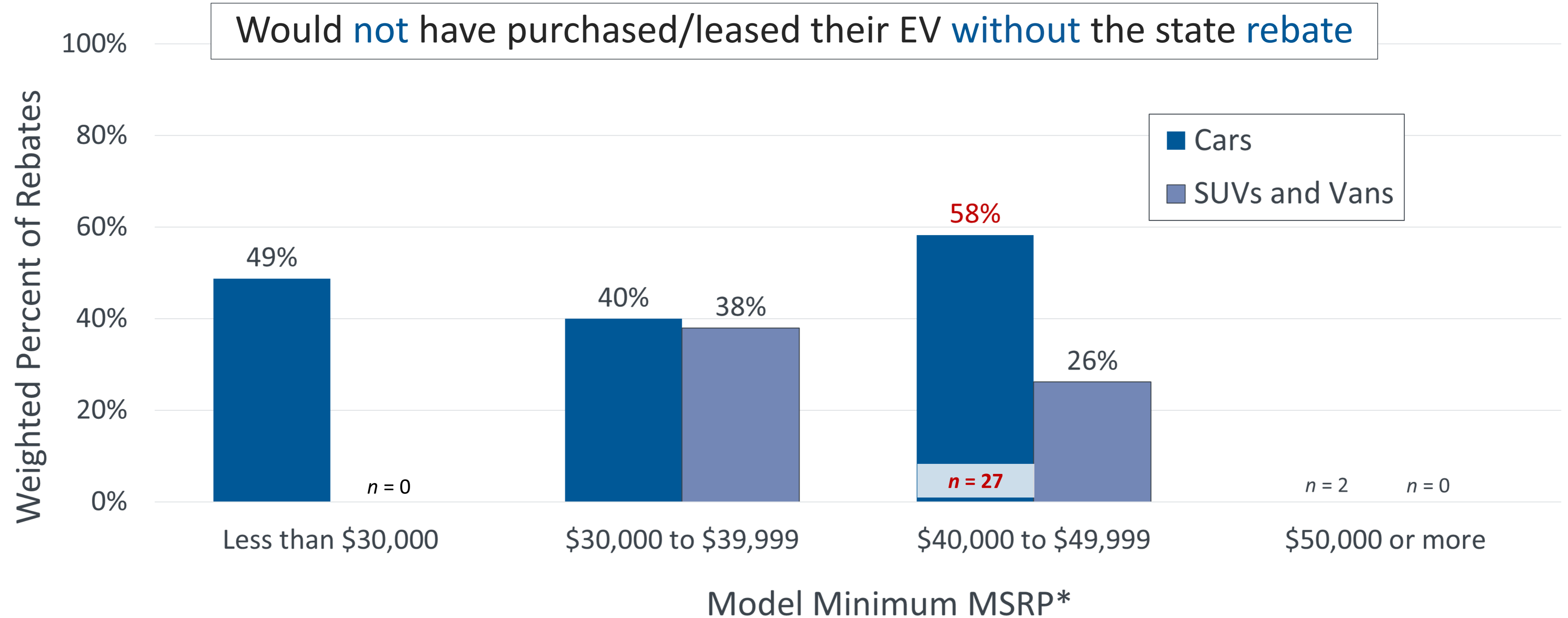


CVRP Consumer Survey, 2017–2020 Edition. 2019 $n = 8,929$. 2020 $n = 4,304$. n -values are filtered and question-specific. 2020 weights specific to 2020 purchases/leases. Starting 12/2019, PEVs with base MSRP > \$60k became ineligible.

* Each vehicle was assigned the minimum Manufacturer's Suggested Retail Price (MSRP) for that model/MY on fueleconomy.gov and does not reflect sale price. Where MSRPs were unavailable for a given MY, MSRPs from the previous or following MY were used. Tesla MSRPs do change mid-MY; Model 3's were assigned an MSRP of \$49k for MY 2018, \$35k for MY 2019 and 2020, and \$39,990 for MY 2021. Model Y's were assigned an MSRP of \$48k for MY 2020 and \$39,990 for MY 2021.

Rebate Essentiality by Vehicle Type & MSRP

2020 Plug-in EV Purchases/Leases

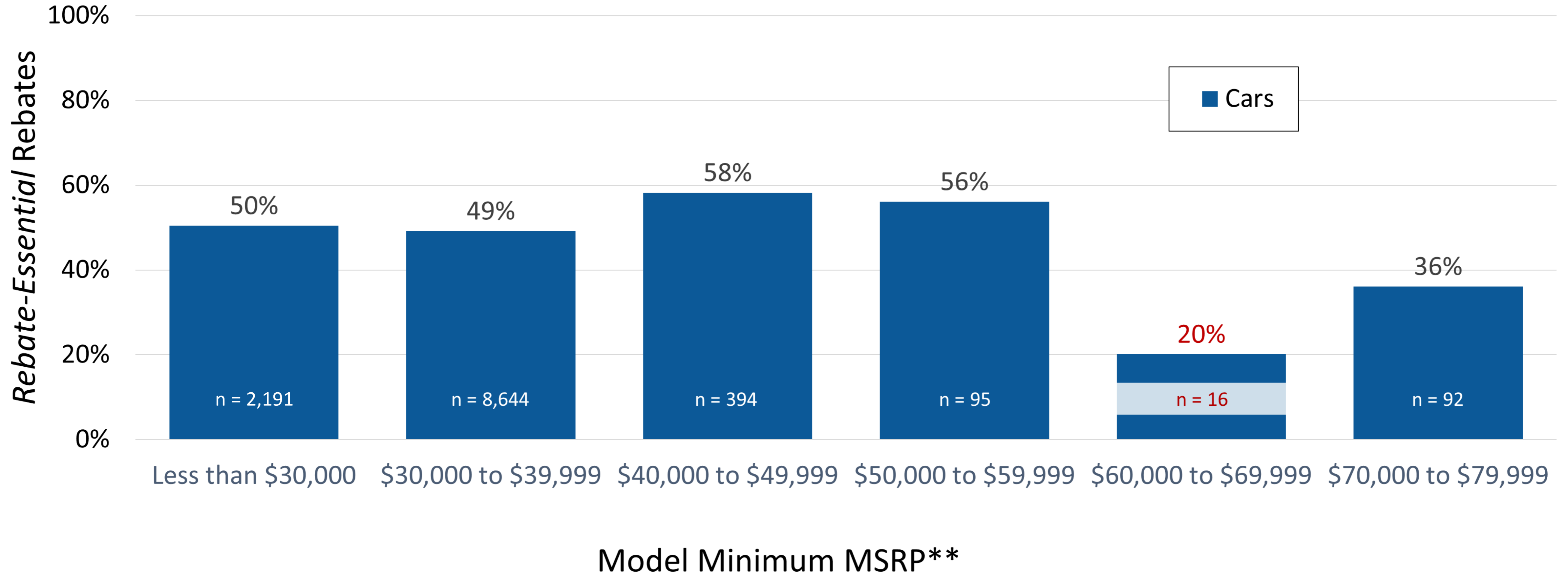


CVRP Consumer Survey, 2017–2020 Edition. Filtered, question-specific $n = 4,304$.

* Each vehicle was assigned the minimum Manufacturer’s Suggested Retail Price (MSRP) for that model/MY on fueleconomy.gov and does not reflect sale price. Where MSRPs were unavailable for a given MY, MSRPs from the previous or following MY were used. Tesla MSRPs do change mid-MY; Model 3’s were assigned an MSRP of \$49k for MY 2018, \$35k for MY 2019 and 2020, and \$39,990 for MY 2021. Model Y’s were assigned an MSRP of \$48k for MY 2020 and \$39,990 for MY 2021.

Rebate Essentiality High for Cars* Below \$60k MSRP

2019–2020 Plug-in EV Purchases/Leases



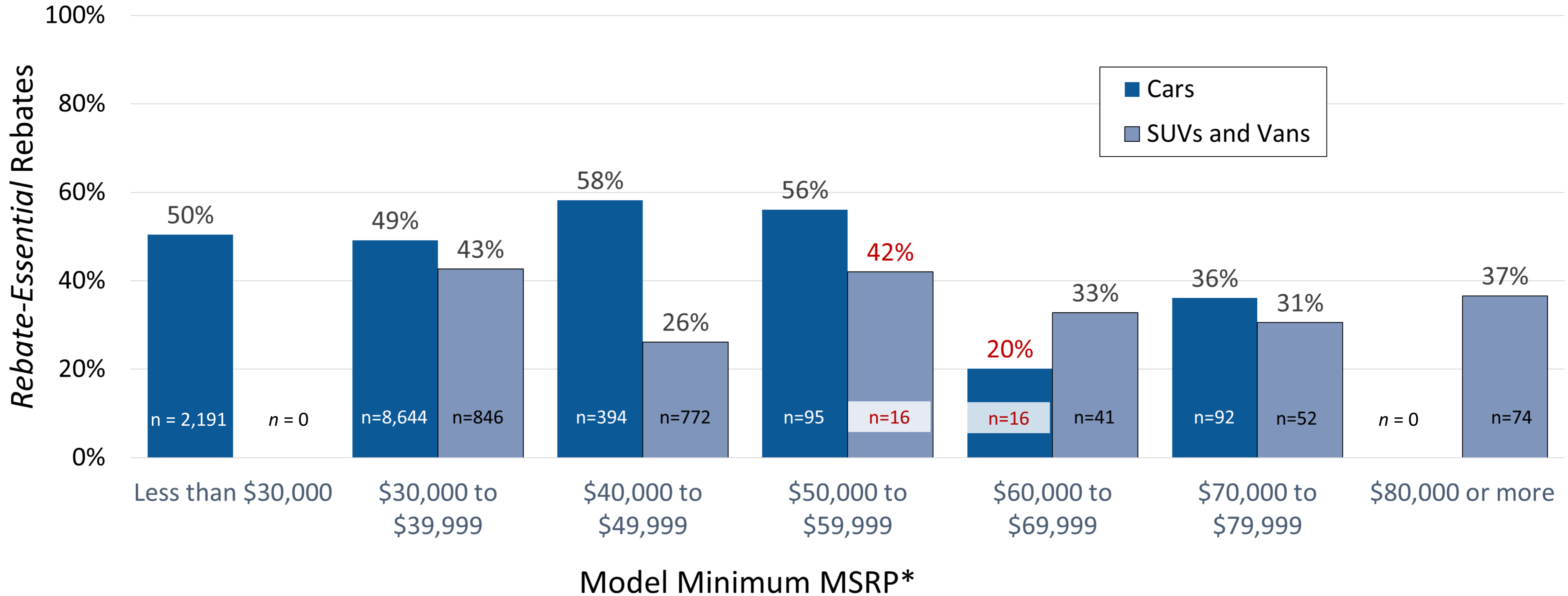
*Excludes SUVs and vans.

** Each vehicle was assigned the minimum Manufacturer’s Suggested Retail Price (MSRP) for that model/MY on fueleconomy.gov and does not reflect sale price. Where MSRPs were unavailable for a given MY, MSRPs from the previous or following MY were used. Tesla MSRPs do change mid-MY; Model 3’s were assigned an MSRP of \$49k for MY 2018, \$35k for MY 2019 and 2020, and \$39,990 for MY 2021. Model Y’s were assigned an MSRP of \$48k for MY 2020 and \$39,990 for MY 2021.

CVRP Consumer Survey, 2017–2020 Edition. Filtered, question-specific n = 11,432.

Rebate Essentiality by Vehicle Type & MSRP

2019–2020 Plug-in EV Purchases/Leases

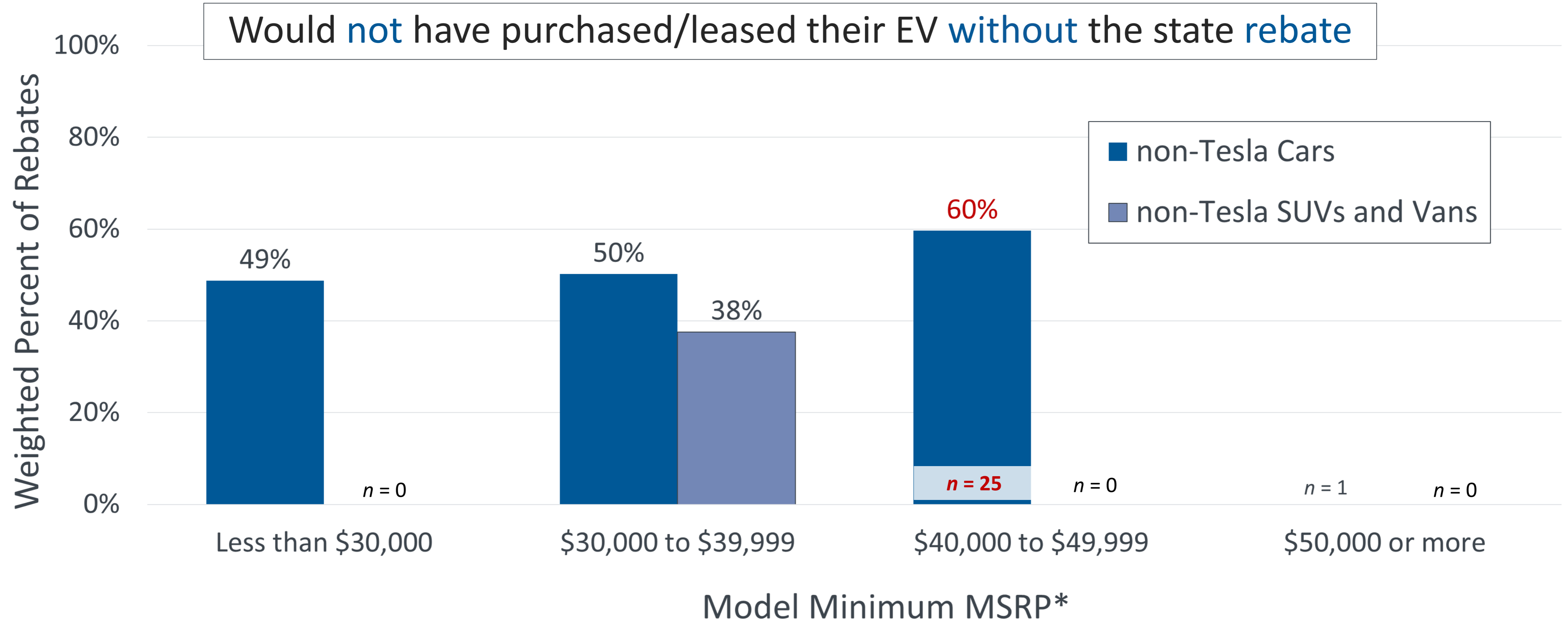


CVRP Consumer Survey, 2017–2020 Edition. Filtered, question-specific $n = 13,233$.

* Each vehicle was assigned the minimum Manufacturer’s Suggested Retail Price (MSRP) for that model/MY on fueleconomy.gov and does not reflect sale price. Where MSRPs were unavailable for a given MY, MSRPs from the previous or following MY were used. Tesla MSRPs do change mid-MY; Model 3’s were assigned an MSRP of \$49k for MY 2018, \$35k for MY 2019 and 2020, and \$39,990 for MY 2021. Model Y’s were assigned an MSRP of \$48k for MY 2020 and \$39,990 for MY 2021.

Rebate Essentiality by Vehicle Type & MSRP, excl. Tesla

2020 Plug-in EV Purchases/Leases



CVRP Consumer Survey, 2017–2020 Edition. Filtered, question-specific $n = 1,983$.

* Each vehicle was assigned the minimum Manufacturer’s Suggested Retail Price (MSRP) for that model/MY on fueleconomy.gov and does not reflect sale price. Where MSRPs were unavailable for a given MY, MSRPs from the previous or following MY were used. Tesla MSRPs do change mid-MY; Model 3’s were assigned an MSRP of \$49k for MY 2018, \$35k for MY 2019 and 2020, and \$39,990 for MY 2021. Model Y’s were assigned an MSRP of \$48k for MY 2020 and \$39,990 for MY 2021.

Rebate Essentiality by Income and MSRP

2020 Plug-in EV Purchases/Leases



Model Minimum MSRP*

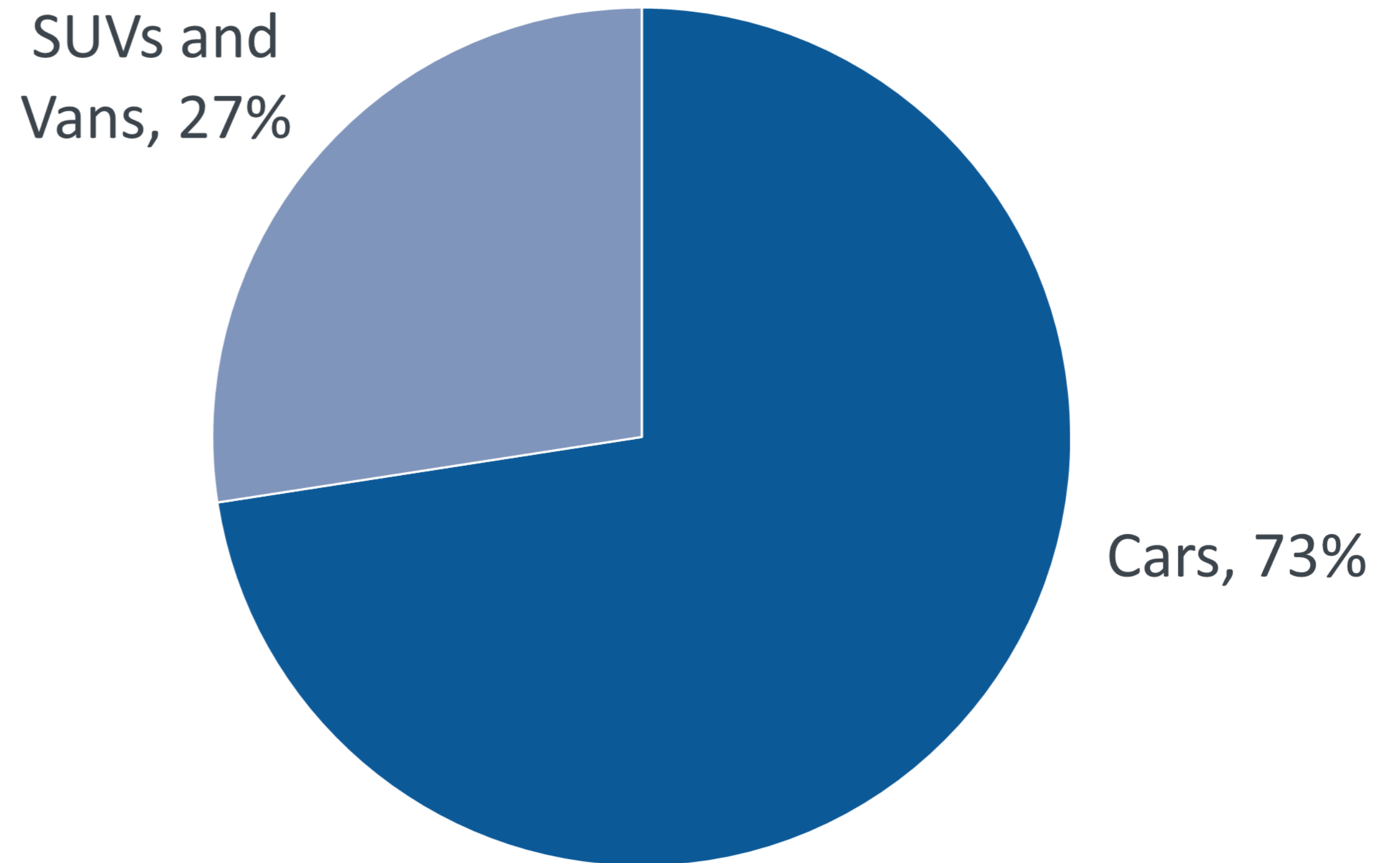
	Less than \$30,000	\$30,000 to \$39,999	\$40,000 to \$49,999
Income			
Less than \$100,000	55%	49%	36%
\$100,000 to \$199,999	43%	36%	26%
\$200,000 to \$299,999	44%	35%	19%
\$300,000 or more	insufficient data	16%	insufficient data

CVRP Consumer Survey, 2017–2020 Edition. Filtered, question-specific $n = 3,805$.

*Excludes MSRP \$50,000+ due to insufficient data. Each vehicle was assigned the minimum Manufacturer’s Suggested Retail Price (MSRP) for that model/MY on fueleconomy.gov and does not reflect sale price. Where MSRPs were unavailable for a given MY, MSRPs from the previous or following MY were used. Tesla MSRPs do change mid-MY; Model 3’s were assigned an MSRP of \$49k for MY 2018, \$35k for MY 2019 and 2020, and \$39,990 for MY 2021. Model Y’s were assigned an MSRP of \$48k for MY 2020 and \$39,990 for MY 2021.

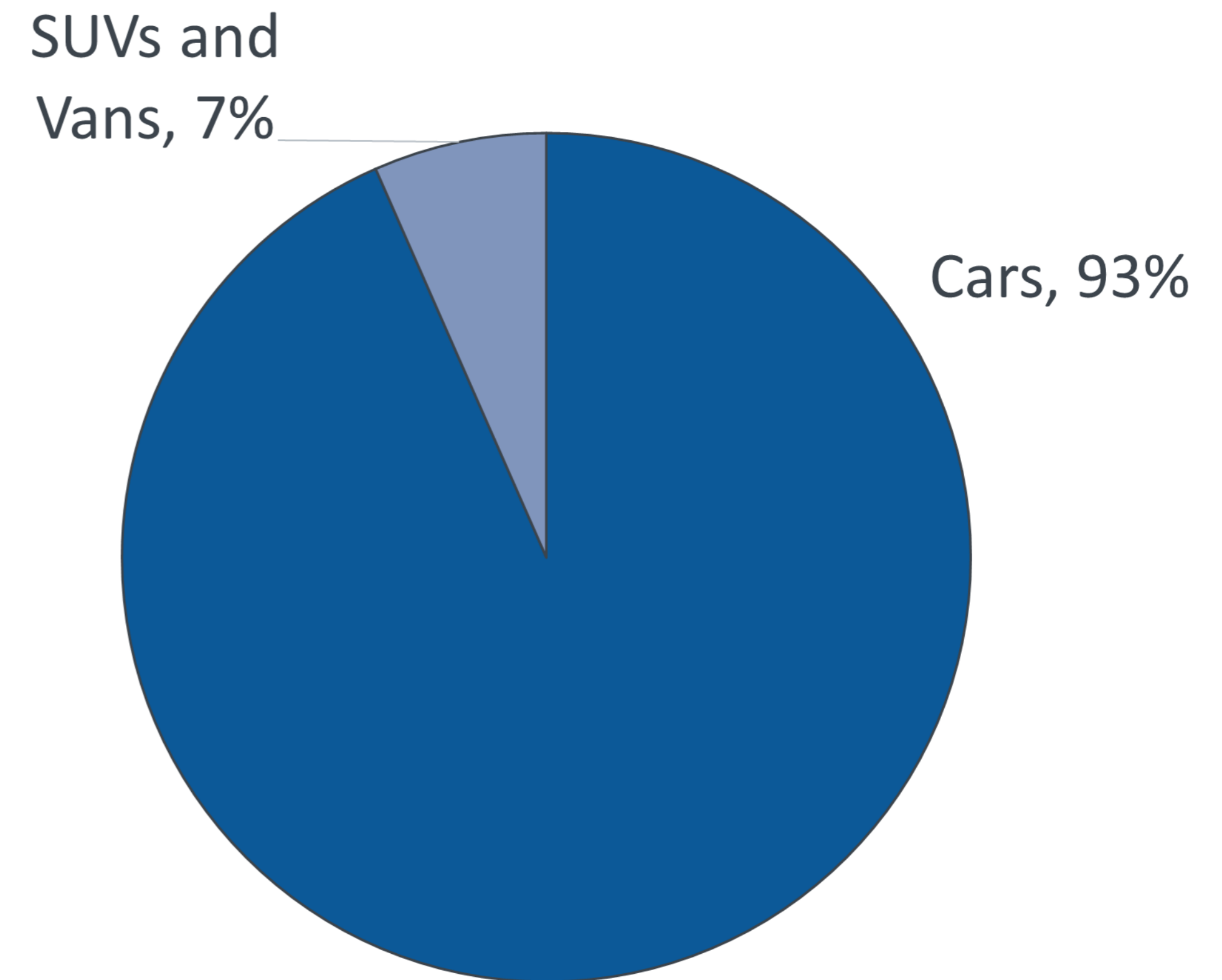
2020 Plug-In EV SUVs and Vans

- Chrysler Pacifica
- Hyundai Kona Electric
- Tesla Model Y
- Toyota RAV4 Prime



2019 Plug-In EV SUVs and Vans

- Audi e-tron
- Chrysler Pacifica
- Hyundai Kona Electric
- Jaguar I-PACE
- Mitsubishi Outlander PHEV
- Subaru Crosstrek Hybrid
- Tesla Model X
- Volvo XC60
- Volvo XC90



New/Upcoming EV SUV, Truck & Van Model Announcements (Illustrative)

Sport Utility Vehicles

Make	Models
Alfa Romeo	Brennero, Tonale
Audi	Q4 e-tron, Q6 e-tron
BMW	iNext, iX
Cadillac	Lyriq
Chevrolet	Blazer SS, Equinox EV
Chrysler	Airflow
Faraday Future	FF91
Ford	Explorer EV
GMC	Hummer SUV
Hyundai	Ioniq 7
Jeep	Wrangler
Lincoln	Corsair-E
Maserati	Grecale
Mercedes-Benz	EQB
Nissan	Ariya
Polestar	3
Porsche	Macan
Subaru	Solterra
Toyota	Bz4x

Vans

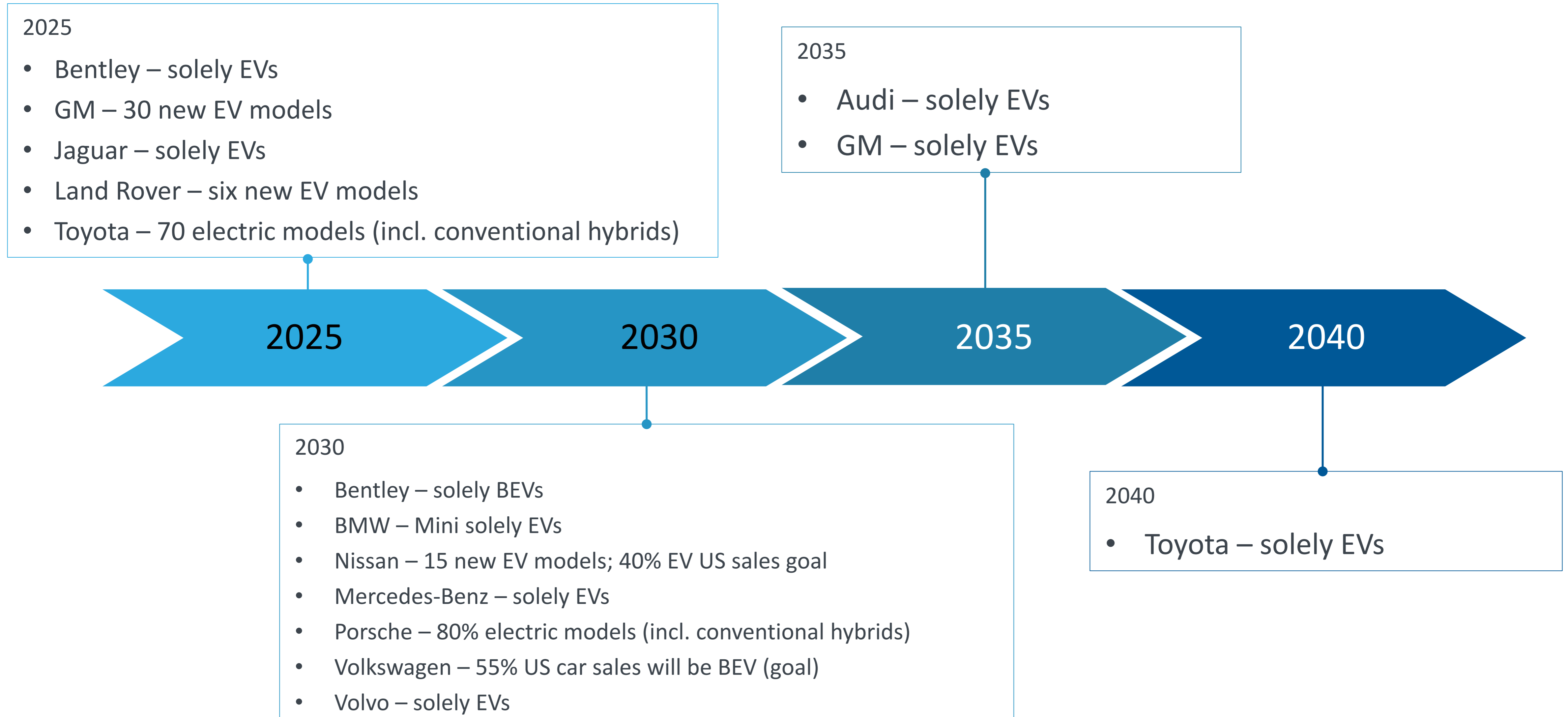
Make	Model
Canoo	Lifestyle Vehicle
Kia	Carnival EV
Volkswagen	ID.Buzz

Pick-up Trucks

Make	Model
Atlis	XT
Canoo	Pickup Truck
Chevrolet	Silverado
Dodge	Ram 1500 EV
Ford	F-150 Lightning
GMC	Hummer Pickup
Lordstown	Endurance
Rivian	R1T
Tesla	Cybertruck

Excludes super-luxury cars (with expected MSRP >\$90,000)

Illustrative Electrification Plan Announcements



Sources: <https://mashable.com/article/traditional-carmakers-going-all-electric-vehicles>
<https://global.nissannews.com/en/releases/nissan-ambition-2030-vision-to-empower-mobility-beyond>

A close-up photograph of a person's hand plugging a charging cable into the port of an electric vehicle. The scene is set outdoors at sunset, with warm, golden light and lens flare effects. In the background, a public charging station with several orange charging cables is visible, along with a blurred city street and buildings.

Summary and Select Findings

Summary & Select Findings: MSRP

Program Design

- MSRP criteria (base MSRP \leq \$60k, excl. FCEVs) introduced into CVRP eligibility effective Dec. 2019
- MSRP caps are a common feature, but states use a variety of approaches

Vehicles Rebated

- Predominantly moderate-MSRP models:
 - MY 2020: 83% with model-minimum MSRP $<$ \$40,000 before incentives

Rebate Influence

- Tesla rebate influence decreases as MSRP increases; influence steadier across MSRP for non-Tesla
- *Rebate Essentiality* (an indicator of program cost-effectiveness) indicates model-minimum MSRP cap for cars should be *at least* \$40k; \$60k may still be appropriate.
- Potentially too early to judge SUV/van MSRP cap
 - Initial data point to a *lower* MSRP cap for SUVs/vans than cars, but that counterproductively wouldn't leave room for new releases
- Attractive offerings (whether SUV body style or Tesla products) are found to have lower *Rebate Essentiality*, especially as MSRP increases

A close-up photograph of a person's hand plugging a charging cable into the charging port of a white electric car. The scene is set outdoors at sunset, with warm, golden light and lens flare effects. In the background, a public charging station with several orange charging cables is visible, along with a building and a bicycle parked nearby.

Additional Resources

CVRP Consumer Survey Editions

(shows rebates to individuals for plug-in EVs* only)

	2013–2015 Edition	2015–2016 Edition	2016–2017 Edition	2017–2020 Edition	Total
Vehicle Purchase/ Lease Dates	Sep. 2012 – May 2015	April 2015 – May 2016	May 2016 – May 2017	June 2017 – Nov. 2020	Sep. 2012 – Nov. 2020
Survey Responses (total <i>n</i>)**	19,460	11,611	8,957	32,524	72,552
Program Population (<i>N</i>)***	91,100	45,700	46,800	193,200	376,800

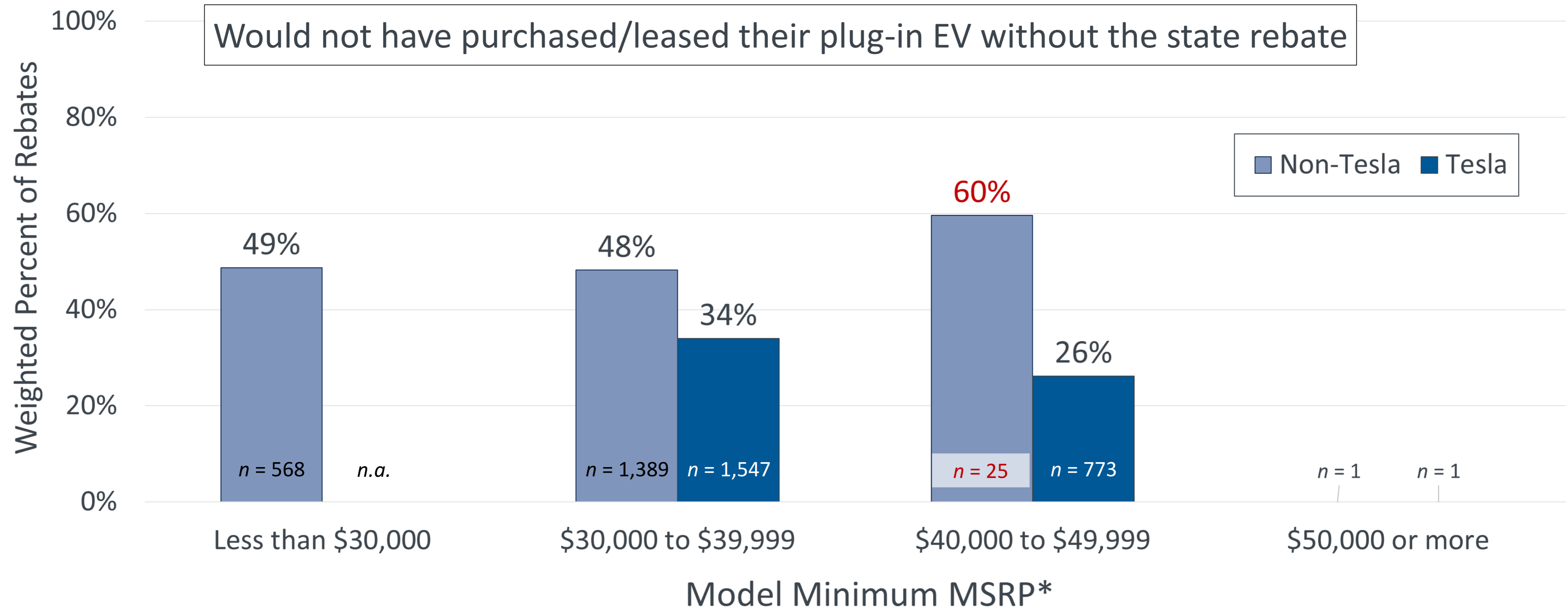
*Plug-in EVs (PEVs) include PHEVs and BEVs.

** Subsequently weighted to represent the program population along the dimensions of vehicle category, vehicle model, buy vs. lease, and county. Weighting dimensions for the 2017–20 Edition also included year of purchase/lease.

*** Small numbers of rebated vehicles are not represented in the time frames due to application lags. Rounded to nearest 100.

Rebate Essentiality by MSRP Decreases for Tesla

2020 purchases/leases

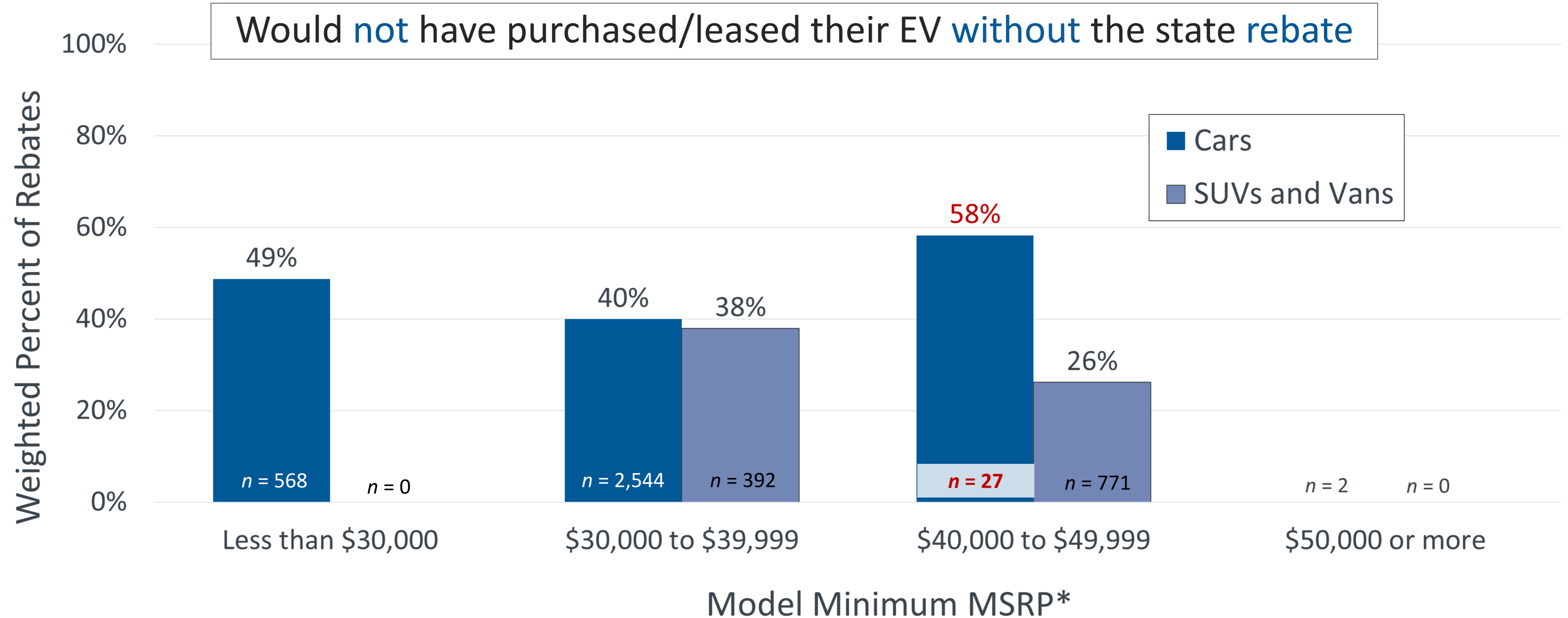


CVRP Consumer Survey, 2017–2020 Edition. Filtered, question-specific n = 4,304.

* Each vehicle was assigned the minimum Manufacturer’s Suggested Retail Price (MSRP) for that model/MY on fueleconomy.gov and does not reflect sale price. Where MSRPs were unavailable for a given MY, MSRPs from the previous or following MY were used. Tesla MSRPs do change mid-MY; Model 3’s were assigned an MSRP of \$49k for MY 2018, \$35k for MY 2019 and 2020, and \$39,990 for MY 2021. Model Y’s were assigned an MSRP of \$48k for MY 2020 and \$39,990 for MY 2021.

Rebate Essentiality by Vehicle Type & MSRP

2020 Plug-in EV Purchases/Leases

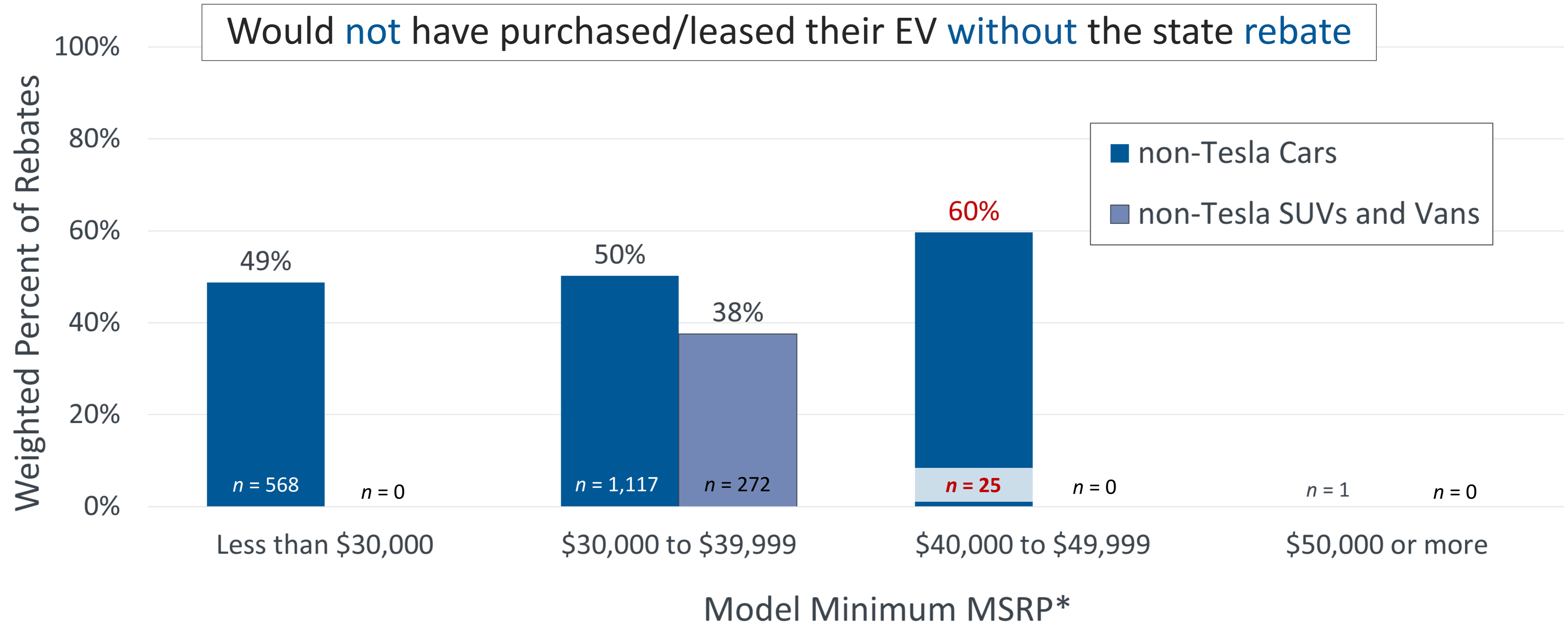


CVRP Consumer Survey, 2017–2020 Edition. Filtered, question-specific $n = 4,304$.

* Each vehicle was assigned the minimum Manufacturer's Suggested Retail Price (MSRP) for that model/MY on fueleconomy.gov and does not reflect sale price. Where MSRPs were unavailable for a given MY, MSRPs from the previous or following MY were used. Tesla MSRPs do change mid-MY; Model 3's were assigned an MSRP of \$49k for MY 2018, \$35k for MY 2019 and 2020, and \$39,990 for MY 2021. Model Y's were assigned an MSRP of \$48k for MY 2020 and \$39,990 for MY 2021.

Rebate Essentiality by Vehicle Type & MSRP, excl. Tesla

2020 Plug-in EV Purchases/Leases



CVRP Consumer Survey, 2017–2020 Edition. Filtered, question-specific $n = 1,983$.

* Each vehicle was assigned the minimum Manufacturer’s Suggested Retail Price (MSRP) for that model/MY on fueleconomy.gov and does not reflect sale price. Where MSRPs were unavailable for a given MY, MSRPs from the previous or following MY were used. Tesla MSRPs do change mid-MY; Model 3’s were assigned an MSRP of \$49k for MY 2018, \$35k for MY 2019 and 2020, and \$39,990 for MY 2021. Model Y’s were assigned an MSRP of \$48k for MY 2020 and \$39,990 for MY 2021.

Select Publications (reverse chronological, as of 5/2022)



- B.D.H. Williams, J.B. Anderson (2022, Jun.), Lessons Learned About Electric Vehicle Consumers Who Found the U.S. Federal Tax Credit Extremely Important in Enabling Their Purchase, for procs. *35th International Electric Vehicle Symposium and Exhibition (EVS35)*, AVERE.
- B.D.H. Williams (2022, Jun.), Targeting Incentives Cost Effectively: “Rebate Essential” Consumers in the New York State Electric Vehicle Rebate Program, for procs. *35th International Electric Vehicle Symposium and Exhibition (EVS35)*, AVERE.
- Williams, B. D. H. (2022, Jan.), [Brief: PHEV Consumers Most Highly Influenced by the U.S. Federal Tax Credit](#). Clean Vehicle Rebate Project
- B.D.H. Williams (2021, Oct.), [An Electric-Vehicle Consumer Segmentation Roadmap: Strategically Amplifying Participation in the New York Drive Clean Rebate Program](#), NYSERDA Report 21-30.
- N. Pallonetti and B. D. H. Williams (2021, Jul.), [“Refining Estimates of Fuel-Cycle Greenhouse-Gas Emission Reductions Associated with California’s Clean Vehicle Rebate Project with Program Data and Other Case-Specific Inputs,”](#) *Energies*, vol. 14, no. 15.
- B. D. H. Williams and J. B. Anderson (2021, Mar.), [“Strategically Targeting Plug-In Electric Vehicle Rebates and Outreach Using ‘EV Convert’ Characteristics,”](#) *Energies*, vol. 14, no. 7, p. 1899.
- S. Hardman, P. Plötz, G. Tal, J. Axsen, E. Figenbaum, P. Jochem, S. Karlsson, N. Refa, F. Sprei, B.D. Williams, J. Whitehead, B. Witkamp (2019), [Exploring the Role of Plug-In Hybrid Electric Vehicles in Electrifying Passenger Transportation](#), International EV Policy Council, UC Davis Plug-in Hybrid and Electric Vehicle Research Center.
- B.D. Williams, J. Orose, M. Jones, J.B. Anderson (2018, Oct.), [Summary of Disadvantaged Community Responses to the Electric Vehicle Consumer Survey, 2013–2015 Edition](#). Clean Vehicle Rebate Project.
- B.D. Williams, J.B. Anderson (2018, Sep.), [Strategically Targeting Plug-in Electric Vehicle Rebates and Outreach Using Characteristics of “Rebate-Essential” Consumers in 2016–2017](#), in: *31st Int. Electr. Veh. Symp.*, Society of Automotive Engineers of Japan, Inc., Kobe, Japan.
- C. Johnson, B.D. Williams, J.B. Anderson, N. Appenzeller (2017, Jun.), [Evaluating the Connecticut Dealer Incentive for Electric Vehicle Sales](#), Center for Sustainable Energy (CSE).
- C. Johnson, B.D. Williams (2017, Jan.), [Characterizing Plug-In Hybrid Electric Vehicle Consumers Most Influenced by California’s Electric Vehicle Rebate](#), *Transp. Res. Rec.* 2628, 23–31.

Select Presentations & Videos (reverse chronological, as of 6/2022)



- [CVRP 2020 Data Brief: Vehicle Replacement](#)
- [CVRP 2020 Data Brief: Incentive Influence](#)
- CARB Video: [“CVRP 2020 Data Brief: Consumer Characteristics,”](#) time 1:05:43–1:26:09. [Slides](#).
- CARB Video: [“Cost-Effectiveness of Greenhouse Gas Emission Reductions Associated with California’s Clean Vehicle Rebate Project in 2019 \(and 2020\),”](#) time 2:01-2:31. [Slides](#).
- [California Plug-in Hybrid EV Consumers Who Found the U.S. Federal Tax Credit Extremely Important in Enabling Their Purchase](#)
- [Data from Statewide Electric Vehicle Rebate Programs: Vehicles, Consumers, Impacts, and Effectiveness](#)
- [CVRP Data Brief: MSRP Considerations](#)
- [EV Purchase Incentives: Program Design, Outputs, and Outcomes of Four Statewide Programs with a Focus on Massachusetts](#)
- [What Vehicles Are Electric Vehicles Replacing and Why?](#)
- [Electric Vehicle Incentives and Policies](#)
- [Proposed FY 2019–20 Funding Plan: Final CVRP Supporting Analysis](#)
- [CVRP: Data and Analysis Update](#)
- [Cost-Effectively Targeting EV Outreach and Incentives to “Rebate-Essential” Consumers](#)
- [Electric Vehicle Rebates: Exploring Indicators of Impact in Four States](#)
- [Targeting EV Consumer Segments & Incentivizing Dealers](#)
- Yale Webinar: [“Supporting EV Commercialization with Rebates: Statewide Programs, Vehicle & Consumer Data, and Findings,”](#) 58 minutes. [Slides](#).
- [CVRP Income Cap Analysis: Informing Policy Discussions](#)

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