

CVRP Data Brief: MSRP Considerations

Revised March 2022 for ADA

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with thanks to M. Eluganti, M. Jones, and others at the Center for Sustainable Energy (CSE)



Outline: MSRP Brief

- 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)

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

State EV Rebate Programs Administered by CSE *(as of 4/6/2021)*



Fuel-Cell EVs	\$4,500	\$2,500	\$5,000	≥ 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	--
All-Battery EVs	\$2,000	\$2,500	≥ 200 e-miles*: \$1,500 < 200 e-miles: \$500			\$25 per electric mile*, up to a max. of \$5,000
Plug-in Hybrid EVs	BEVx = \$2,000 Others = \$1,000	BEVx = \$2,500 Others = \$1,500				
Zero-Emission Motorcycles	\$750	--	--	--	\$750 (and NEVs)	--
Program Design Elements	<ul style="list-style-type: none"> Base MSRP: - PEVs ≤ \$60k ≥ 30 electric miles* Income cap +\$2,500 for income-qualified households 	<ul style="list-style-type: none"> Purchase price ≤ \$50k ≥ 25 electric miles* 	<ul style="list-style-type: none"> Base MSRP: - FCEVs ≤ \$60k - PEVs ≤ \$42k 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 +\$2,500 for income-qualified households, used EVs also qualify 	<ul style="list-style-type: none"> Trim-specific MSRP <\$55k Post-purchase, to be replaced with point-of-sale rebate at a later date

* Electric miles (e-miles) are U.S.-EPA-rated all-electric miles.

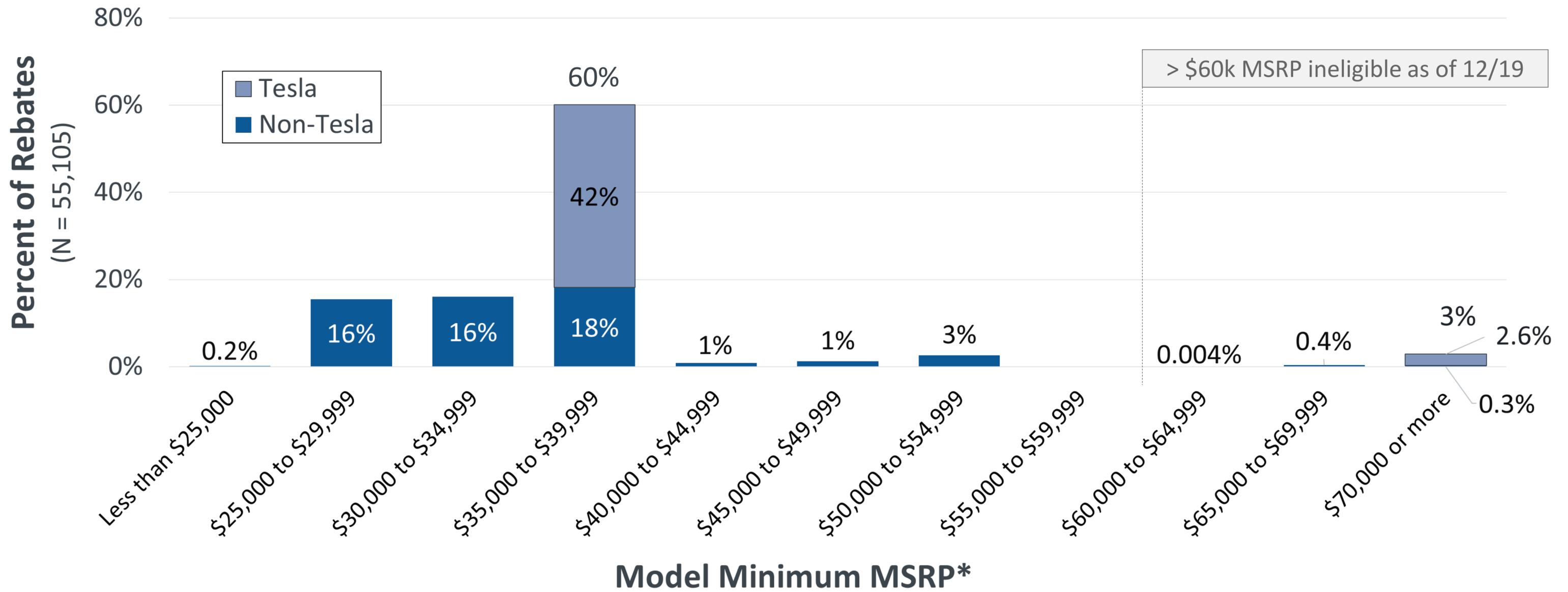
A close-up photograph of a hand plugging a charging cable into the charging port of an electric vehicle. The scene is set during sunset, with warm, golden light and lens flare effects. The background shows a blurred urban environment with buildings and other vehicles.

Program Outputs

Vehicles Rebated by MSRP

Moderately-Priced Vehicles Receive Most Rebates

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

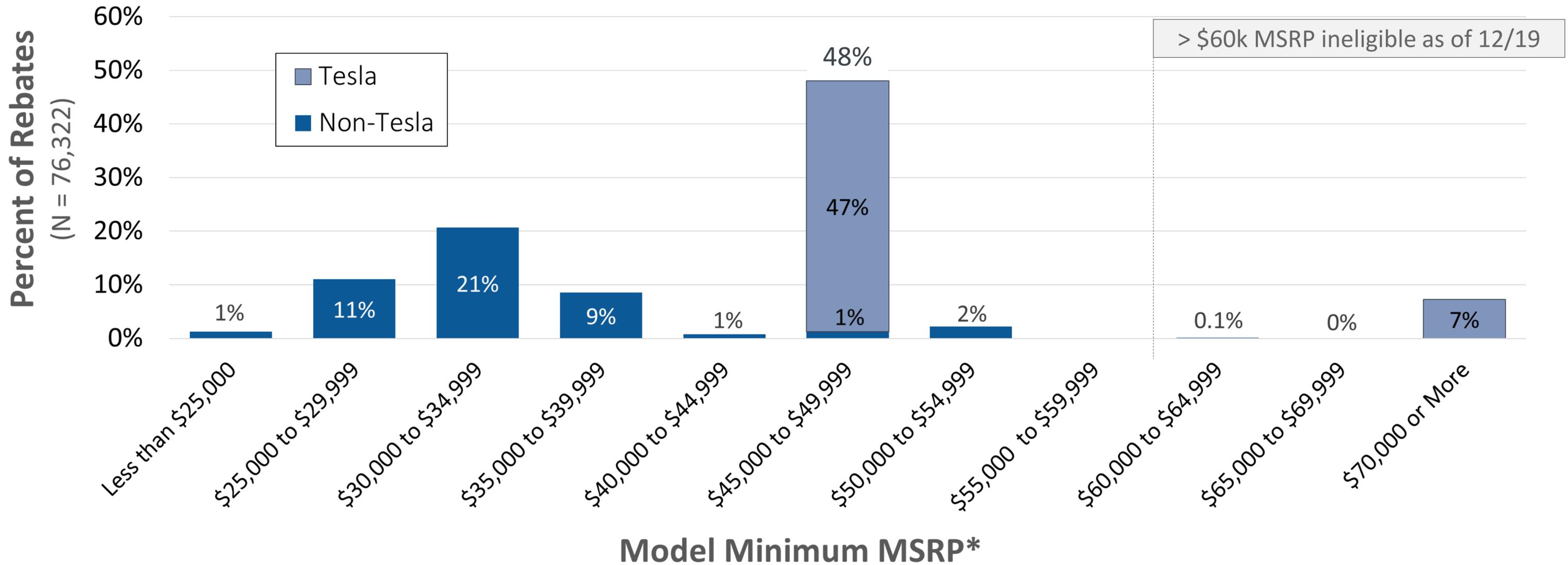


*Does not reflect sales price:
 Each vehicle was assigned the minimum Manufacturer's Suggested Retail Price (MSRP) for that model/MY on fueleconomy.gov.
 Tesla Model 3's were assigned an MSRP of \$35k. Where MY 2019 MSRPs were unavailable, MY '18 MSRPs were used.

Moderately-Priced Vehicles Receive Most Rebates

(especially non-Tesla)

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).

A close-up photograph of a hand plugging a charging cable into the port of an electric vehicle. The scene is set during sunset, with warm, golden light and lens flare effects. The background shows a blurred urban environment with buildings and other vehicles.

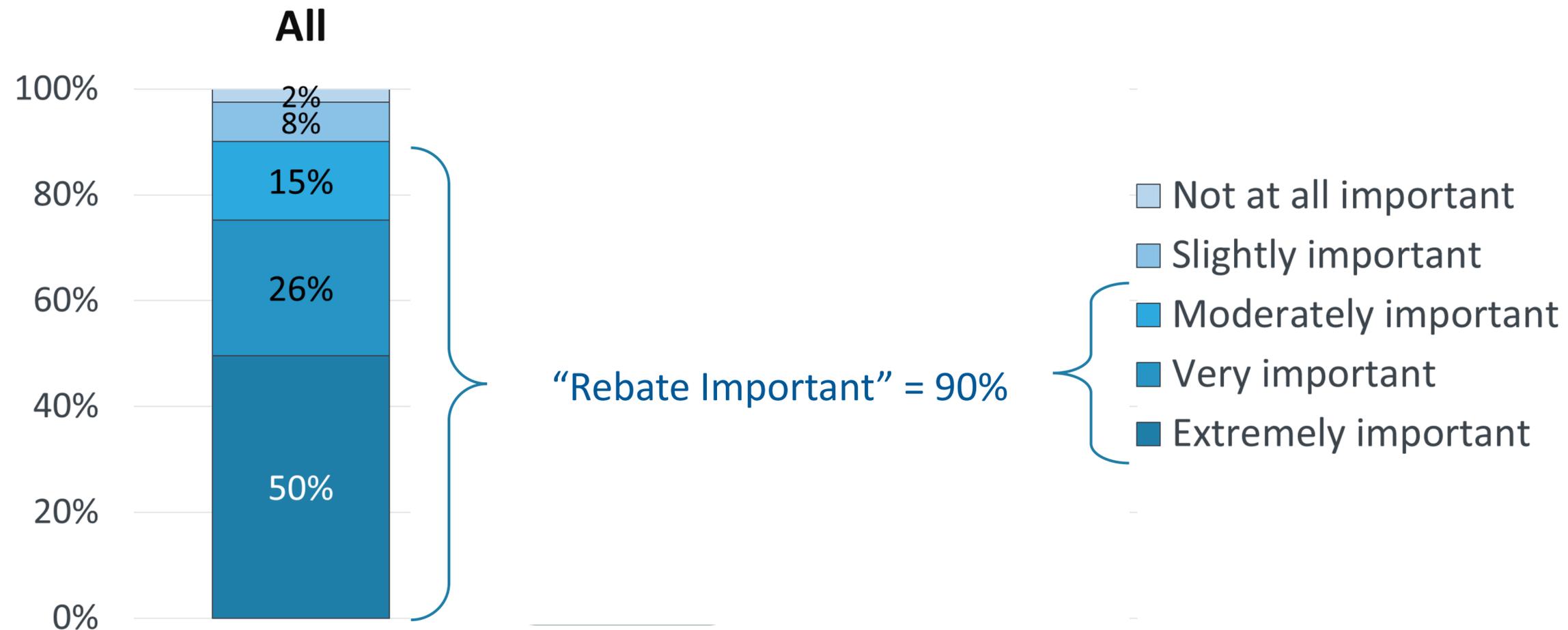
Program Impacts: Market Additions

Rebate Influence by MSRP

Rebate Importance

(CY 2019 Plug-in EVs)

How **important** was the state rebate in **making it possible** for you to acquire your clean vehicle?

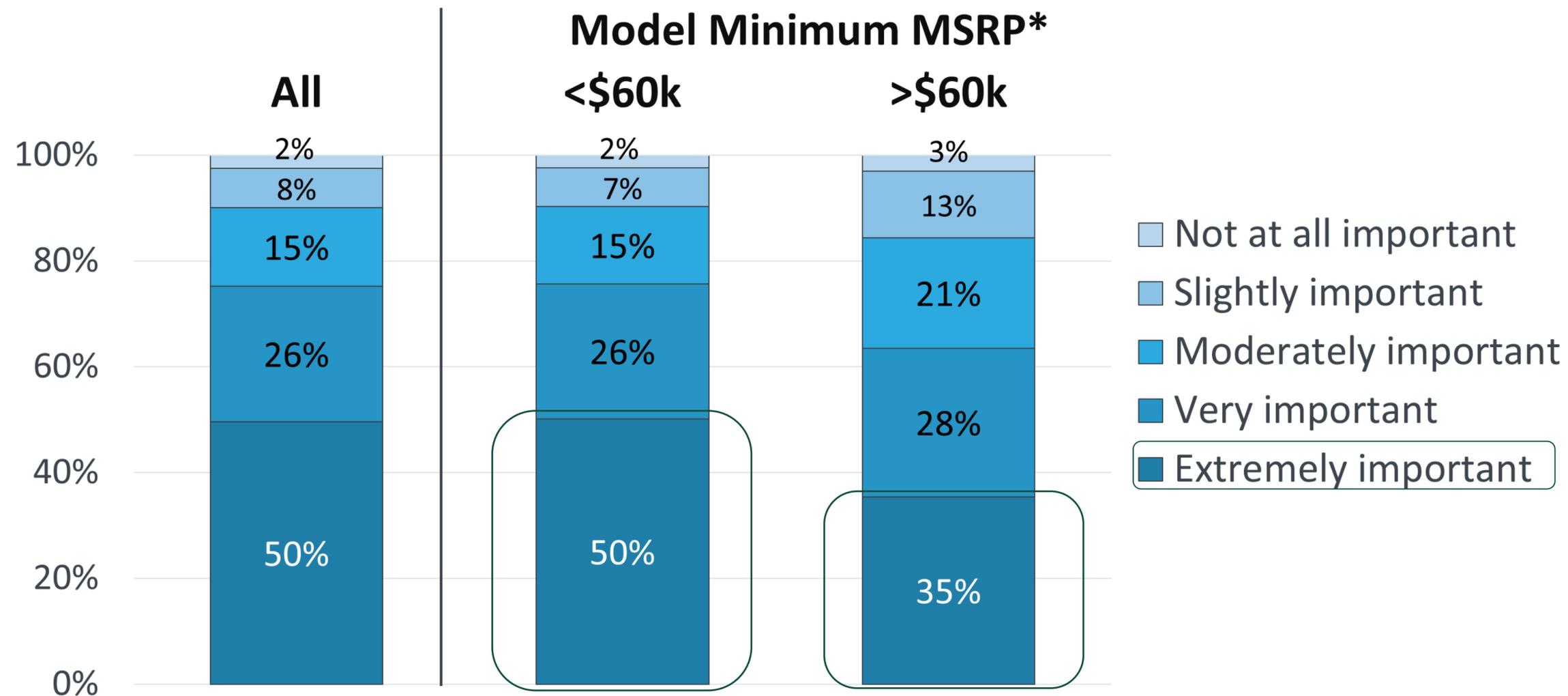


*CVRP Consumer Survey: 2017–2019 edition. Question-specific weighted n = 6,120.
Starting Dec. 2019, PEVs with base MSRP greater than \$60k became ineligible.*

Rebate Importance Decreases Above \$60k MSRP

(CY 2019 Plug-in EVs)

How **important** was the state rebate in **making it possible** for you to acquire your clean vehicle?



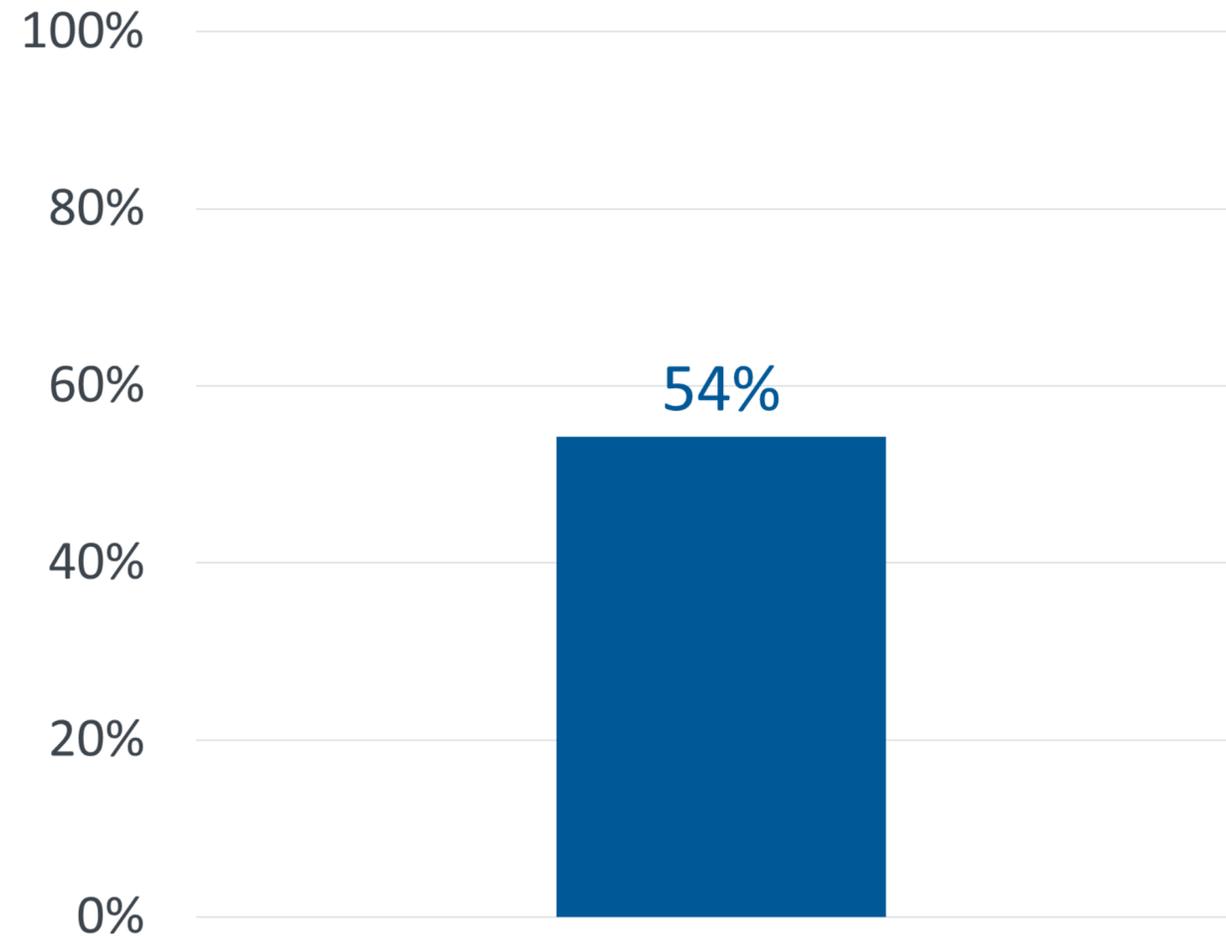
*Each vehicle was assigned the minimum Manufacturer's Suggested Retail Price (MSRP) for that model/MY on fueleconomy.gov and does not reflect sale price. Where MSRPs were unavailable for a given MY, MSRPs from the previous or following MY were used. Tesla Model 3's were assigned an MSRP of \$49k for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

CVRP Consumer Survey: 2017–2019 edition. Question weighted n = 6,120. Starting Dec. 2019, PEVs with base MSRP greater than \$60k became ineligible.

Rebate Essentiality

(CY 2019 Plug-in EV Purchases/Leases)

Would **not** have purchased/leased their EV **without** the state **rebate**

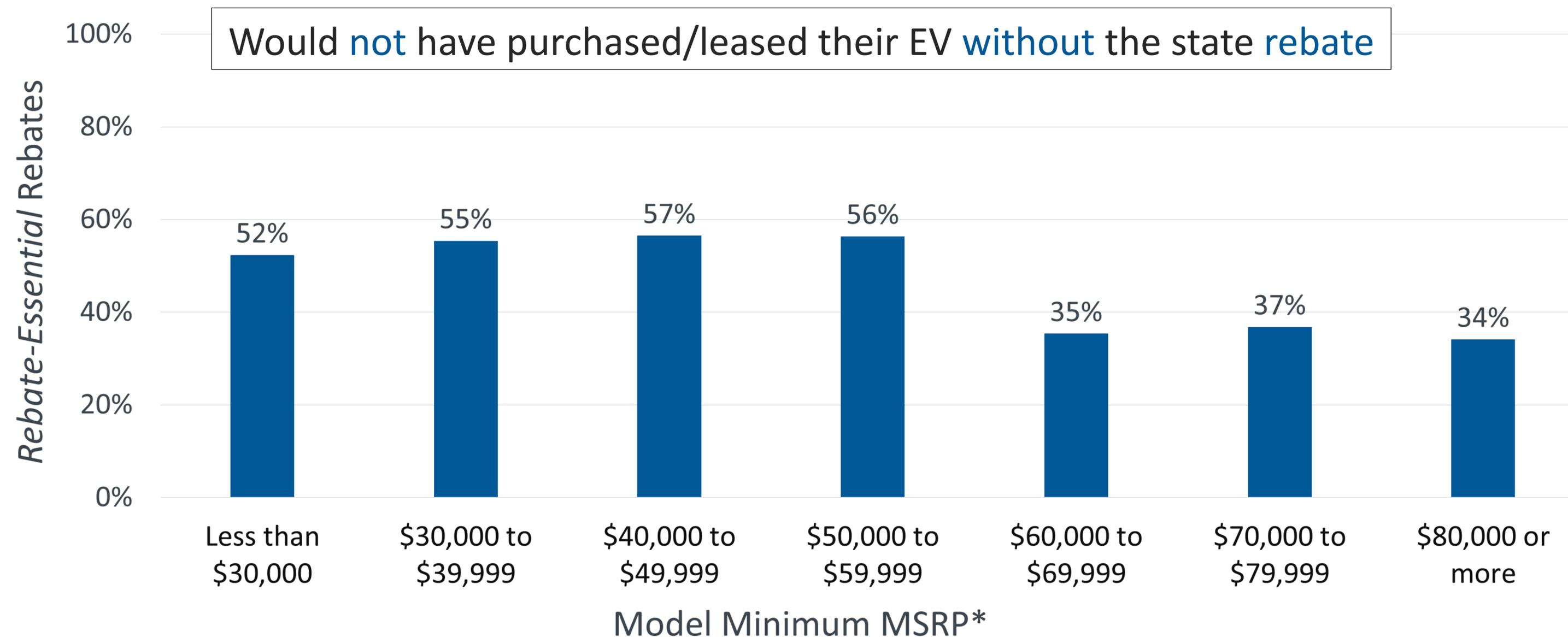


CVRP Consumer Survey: 2017–2019 edition. Filtered question, weighted n = 6,158.

Starting 12/2019, PEVs with base MSRP > \$60k became ineligible.

Rebate Essentiality Decreases Above \$60k MSRP

(CY 2019 Plug-in EV Purchases/Leases)



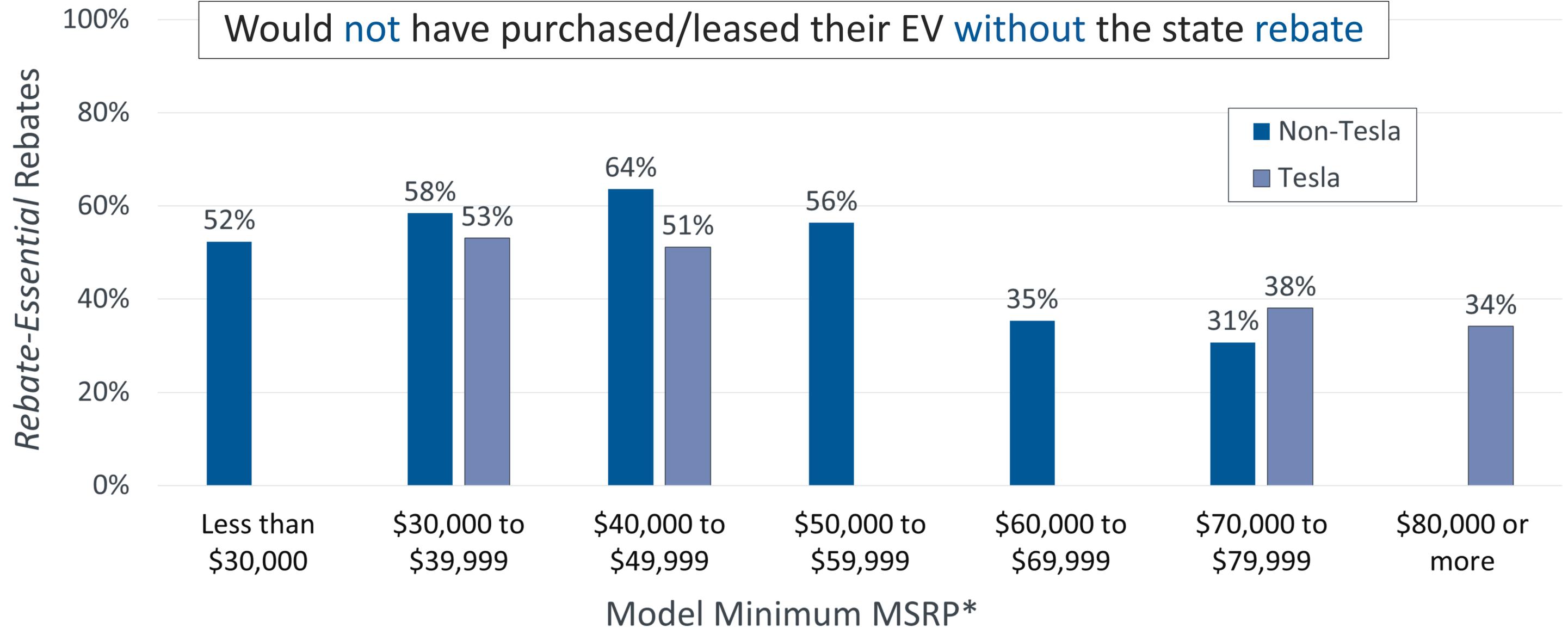
CVRP Consumer Survey: 2017–2019 edition. Filtered question, weighted $n = 6,158$. Starting 12/2019, PEVs with base MSRP > \$60k became ineligible.

* 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 Model 3’s were assigned an MSRP of \$49k for MY 2018, \$35k for MY 2019 and 2020.

Rebate Essentiality Similar But Lower for Tesla

(CY 2019 Plug-in EV Purchases/Leases)



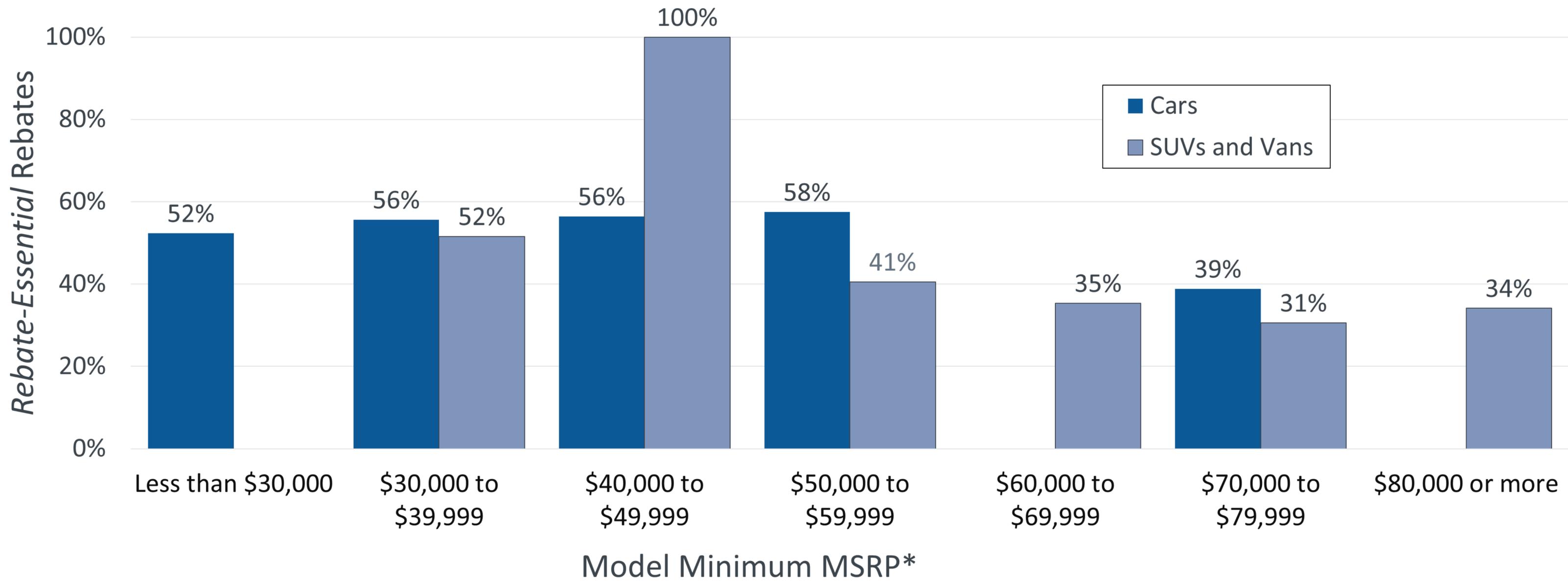
CVRP Consumer Survey: 2017–2019 edition. Filtered question, weighted n = 6,158. Starting 12/2019, PEVs with base MSRP > \$60k became ineligible.

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Tesla Model 3’s were assigned an MSRP of \$49k for MY 2018, \$35k for MY 2019 and 2020.

Rebate Essentiality High for Cars Below \$60k MSRP

(CY 2019 Plug-in EV Purchases/Leases)

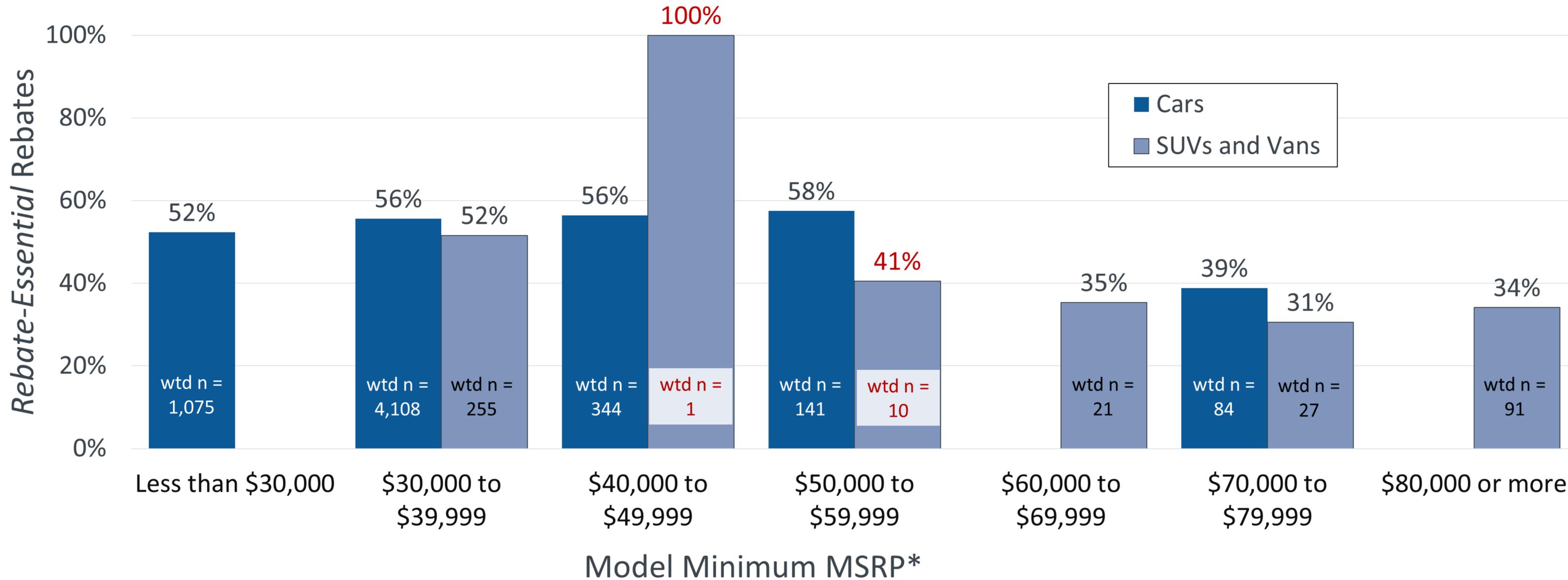


CVRP Consumer Survey: 2017–2019 edition. Filtered question, weighted n = 6,158. Starting 12/2019, PEVs with base MSRP > \$60k became ineligible.

** 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, MSRPs from the previous or following MY were used. Tesla Model 3’s were assigned an MSRP of \$49k for MY 2018, \$35k for MY 2019 and 2020.*

Rebate Essentiality: More Data Needed for SUVs/Van

(CY 2019 Plug-in EV Purchases/Leases)

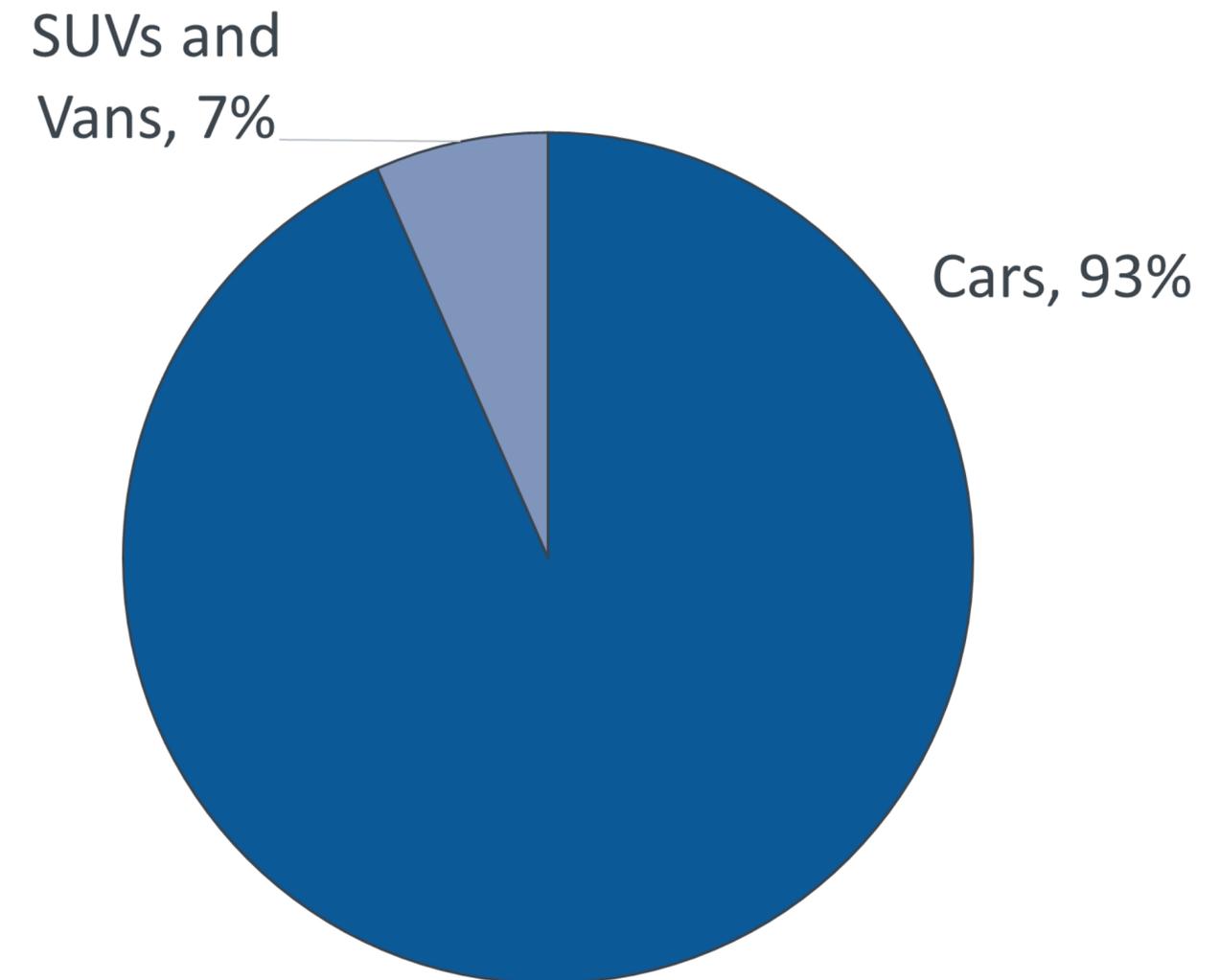


CVRP Consumer Survey: 2017–2019 edition. Filtered question, weighted n = 6,158. Starting 12/2019, PEVs with base MSRP > \$60k became ineligible.

* 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, MSRPs from the previous or following MY were used. Tesla Model 3's were assigned an MSRP of \$49k for MY 2018, \$35k for MY 2019 and 2020.

CY 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



Illustrative Upcoming EV Model Announcements (with **uncertainties**)

Make	Model	Model Year	Vehicle Class
Atlis	XT	2021	Standard Pick-up Trucks
Audi	Q4 e-tron	2021	Small Sport Utility Vehicle
BMW	iNext	2021	Standard Sport Utility Vehicle
BMW	i4	2021	Large Cars
BMW	i7	2022	Large Cars
BMW	X8	2023	Standard Sport Utility Vehicle
BMW	5 series electric	TBD	Compact Cars
BMW	X1	TBD	Large Cars
BMW	7 Series PHEV	TBD	Compact Cars
BMW	7 Series EV	TBD	Compact Cars
Byton	M-Byte	2021	Small Station Wagons
Cadillac	Lyriq	2021	Standard Sport Utility Vehicle
Cadillac	Celestiq	2023	Large Cars
Fisker	Ocean	2021	Small Sport Utility Vehicle
Ford	F-150 Electric	2022	Standard Pick-up Trucks
Ford	Transit EV	2023	Special Purpose Vehicle
GMC	Hummer	2021	Standard Sport Utility Vehicle
GMC	Hummer SUV	2023	Standard Sport Utility Vehicle
GMC	Electric Van	2023	Special Purpose Vehicle
Honda	E	2024	Compact Cars
Hyundai	Ioniq 5	2022	Sport Utility Vehicle
Hyundai	Ioniq 6	2022	TBD
Hyundai	Ioniq 7	2024	Standard Sport Utility Vehicle
Hyundai	Tucson PHEV	2022	Small Sport Utility Vehicle
Jeep	Grand Cherokee	TBD	Sport Utility Vehicle
Kandi	K23	2021	Subcompact Cars
Karma	GS series sedan	2022	TBD

Make	Model	Model Year	Vehicle Class
Kia	Soul EV (relaunch)	2021	Small Station Wagons
Kia	EV6	2022	Small Sport Utility Vehicle
Land Rover	Range Rover	2022	Sport Utility Vehicle
Lordstown	Endurance	2021	Standard Pick-up Trucks
Mazda	MX-30	TBD	Small Sport Utility Vehicle
Mercedes-Benz	EQC	2021	Small Sport Utility Vehicle
Mercedes-Benz	EQA	2021	Small Station Wagons
Mercedes-Benz	EQB	2022	Small Sport Utility Vehicle
Mercedes-Benz	EQS	2022	Large Cars
Mercedes-Benz	EQE	2023	Compact Cars
Mitsubishi	Eclipse Cross	2022	Small Sport Utility Vehicle
Nikola	Badger 600-mi FC REX	TBD	Standard Sport Utility Vehicle
Nikola	Badger 300-mi	TBD	Standard Pick-up Trucks
Nissan	Ariya	2021	Small Station Wagons
Nissan	Maxima	2023	Midsize Cars
Polestar.	Polestar 3	TBD	Large Cars
Porsche	Macan	2023	Small Sport Utility Vehicle
Porsche	718 Boxster	2023	TBD
Porsche	718 Cayman	2023	TBD
Rivian	R1T 180 kWh	2021	Standard Pick-up Trucks
Rivian	R1S	2021	Standard Sport Utility Vehicle
Rivian	R1T 105 kWh	TBD	Standard Pick-up Trucks
Rivian	Delivery Van	TBD	Special Purpose Vehicle
Tesla	Cybertruck	2021	Standard Pick-up Trucks
Volkswagen	ID.Buzz	TBD	Special Purpose Vehicle, Minivan
Volkswagen	ID.Buggy	TBD	Two Seaters
Volvo	C40	2022	Sport Utility Vehicle

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

A close-up photograph of a person's hand plugging a charging cable into the charging port of a white electric vehicle. The scene is set outdoors at sunset, with warm, golden light and lens flare effects. In the background, a public bicycle-sharing station with several bicycles docked is visible. The overall atmosphere is clean, modern, and sustainable.

Summary and Select Findings

Summary & Select Findings: MSRP

Program Design

- MSRP criteria introduced into CVRP eligibility effective 12/3/2019
- MSRP caps are a common feature, but states use a variety of different approaches

Vehicles Rebated

- Predominantly moderate-MSRP models:
 - MY 2019: 92% with model-minimum MSRP <\$40,000 before incentives

Rebate Influence

- At MSRP greater than \$60k, rebate influence decreases substantially
- *Rebate Essentiality* (an indicator of program cost-effectiveness) indicates \$60k model-minimum MSRP cap is still appropriate for cars
- Too early (insufficient data) to judge SUV/van MSRP cap
 - Initial, limited data points to *lower* MSRP cap for SUVs/vans than cars, but that counterproductively wouldn't leave room for new releases

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 a bright sun in the upper right corner creating a lens flare effect. In the background, a public charging station with several orange charging cables is visible, along with a building and a bicycle parked nearby. The overall atmosphere is warm and modern.

Additional Resources

Select Publications

(Reverse Chronological, as of 12/21/21)



- N. Pallonetti and B.D.H. Williams (2022, January). [“Evaluating the Cost-Effectiveness of Greenhouse Gas Emission Reductions Associated with Statewide Electric Vehicle Rebate Programs in California and Massachusetts in 2019,”](#) in procs. [International Energy Program Evaluation Conference 2022.](#)
- N. Pallonetti and B. D. H. Williams, [“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, Jul. 2021.
- B. D. H. Williams and J. B. Anderson, [“Strategically Targeting Plug-In Electric Vehicle Rebates and Outreach Using ‘EV Convert’ Characteristics,”](#) *Energies*, vol. 14, no. 7, p. 1899, Mar. 2021.
- B.D.H. Williams, J.B. Anderson, A. Lastuka, [Characterizing Plug-in Hybrid Electric Vehicle Consumers Who Found the U.S. Federal Tax Credit Extremely Important in Enabling Their Purchase](#), in: 33rd Electr. Veh. Symp., Electric Drive Transportation Association (EDTA), EVS33, and Zenodo, Portland OR, 2020. <https://doi.org/10.5281/ZENODO.4021408>
- 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, [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, 2019.
- B.D. Williams, J. Orose, M. Jones, J.B. Anderson, [Summary of Disadvantaged Community Responses to the Electric Vehicle Consumer Survey, 2013–2015 Edition](#) | Clean Vehicle Rebate Project, Center for Sustainable Energy (CSE), San Diego CA, 2018.
- B.D. Williams, J.B. Anderson, [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, 2018.
- C. Johnson, B.D. Williams, J.B. Anderson, N. Appenzeller, [Evaluating the Connecticut Dealer Incentive for Electric Vehicle Sales](#), Center for Sustainable Energy (CSE), 2017.
- C. Johnson, B.D. Williams, [Characterizing Plug-In Hybrid Electric Vehicle Consumers Most Influenced by California’s Electric Vehicle Rebate](#), *Transp. Res. Rec.* 2628 (2017) 23–31.

Select Presentations (Reverse Chronological, as of 2/22)



- [Cost-Effectiveness of Greenhouse Gas Emission Reductions Associated with California’s Clean Vehicle Rebate Project in 2019 \(and 2020\)](#)
- [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 CY 2019 Data Brief: Vehicle Replacement & Incentive Influence](#)
- [CVRP CY 2019 Data Brief: Consumer Characteristics](#)
- [CVRP Data Brief: MSRP Considerations](#) (this presentation)
- [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](#)
- [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](#)
- [CVRP Income Cap Analysis: Informing Policy Discussions](#)

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 CleanVehicleRebate.org

