Preliminary CVRP Projections: 2021–2023: Update 3

New methodology implemented that is intended to account for impact of the COVID-19 pandemic and other factors. Under review and subject to change.

June 30, 2021

John Anderson

Transparency and Insights

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Outline

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Rebate Demand Context

Rebate Demand by Application Date and Type
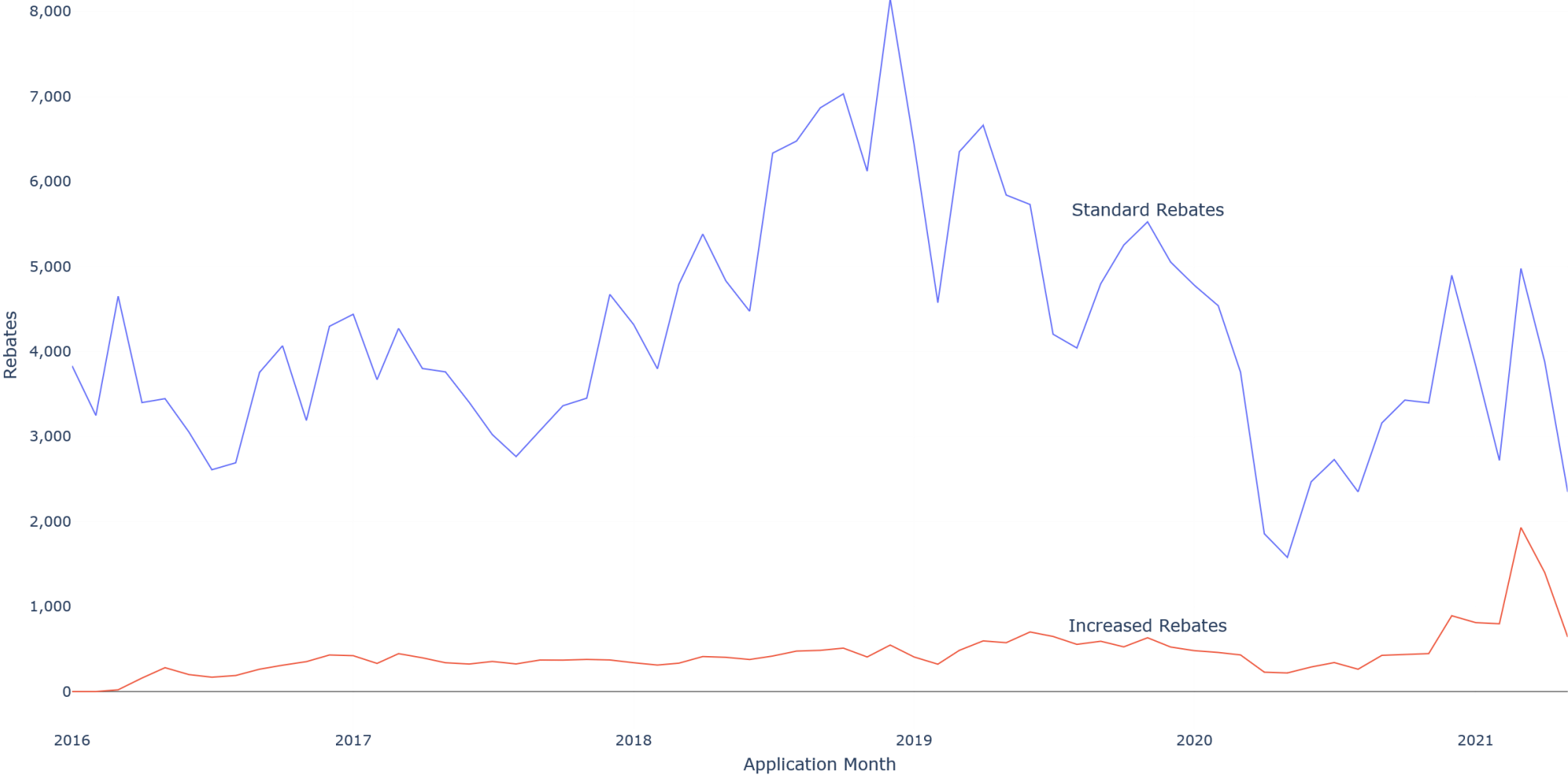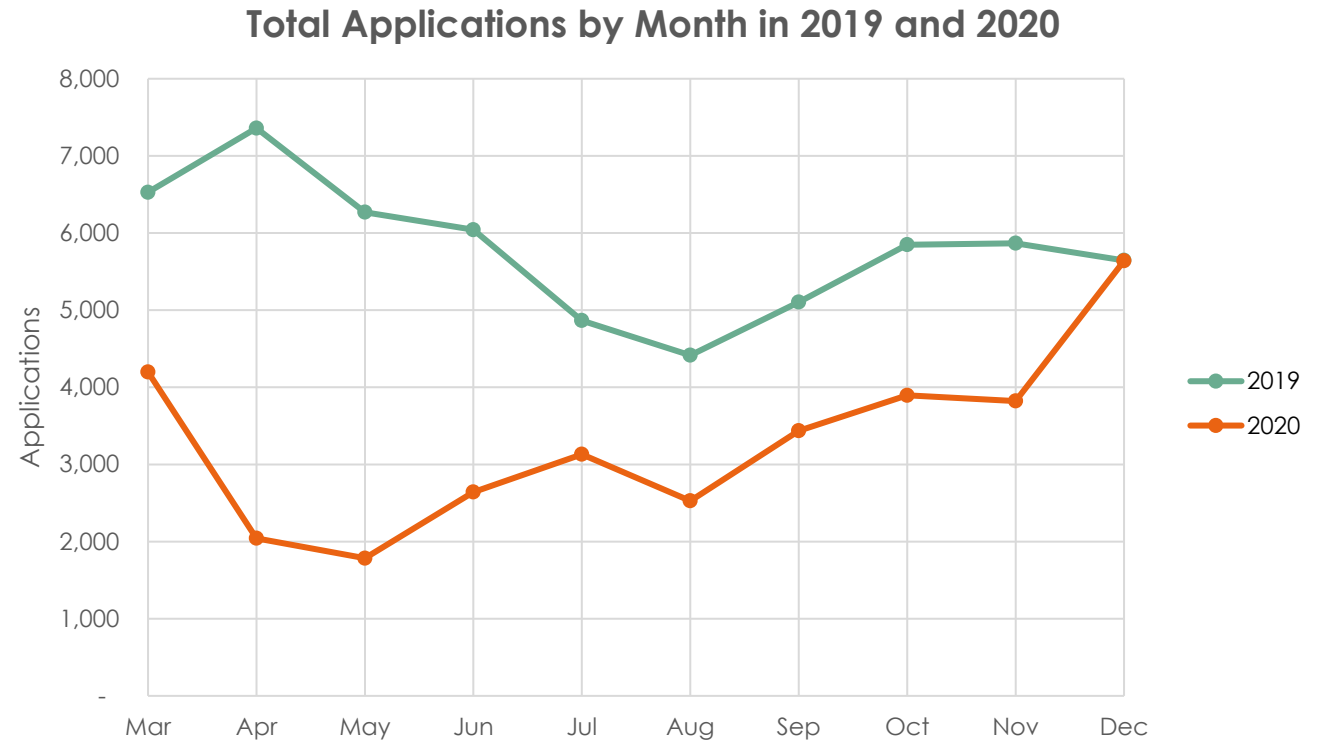
Overview of CVRP Applications in 2019 and 2020*

- 43% decrease in applications in 2020
- "Sustained" recovery started in September 2020

Year	Total Applications*
2019	57,941
2020	33,119
% change	-43%

Total Applications by Month in 2019 and 2020

Applications are aggregated from Mar – Dec for year 2019 and 2020

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Average Monthly Standard Rebates by Model and Time
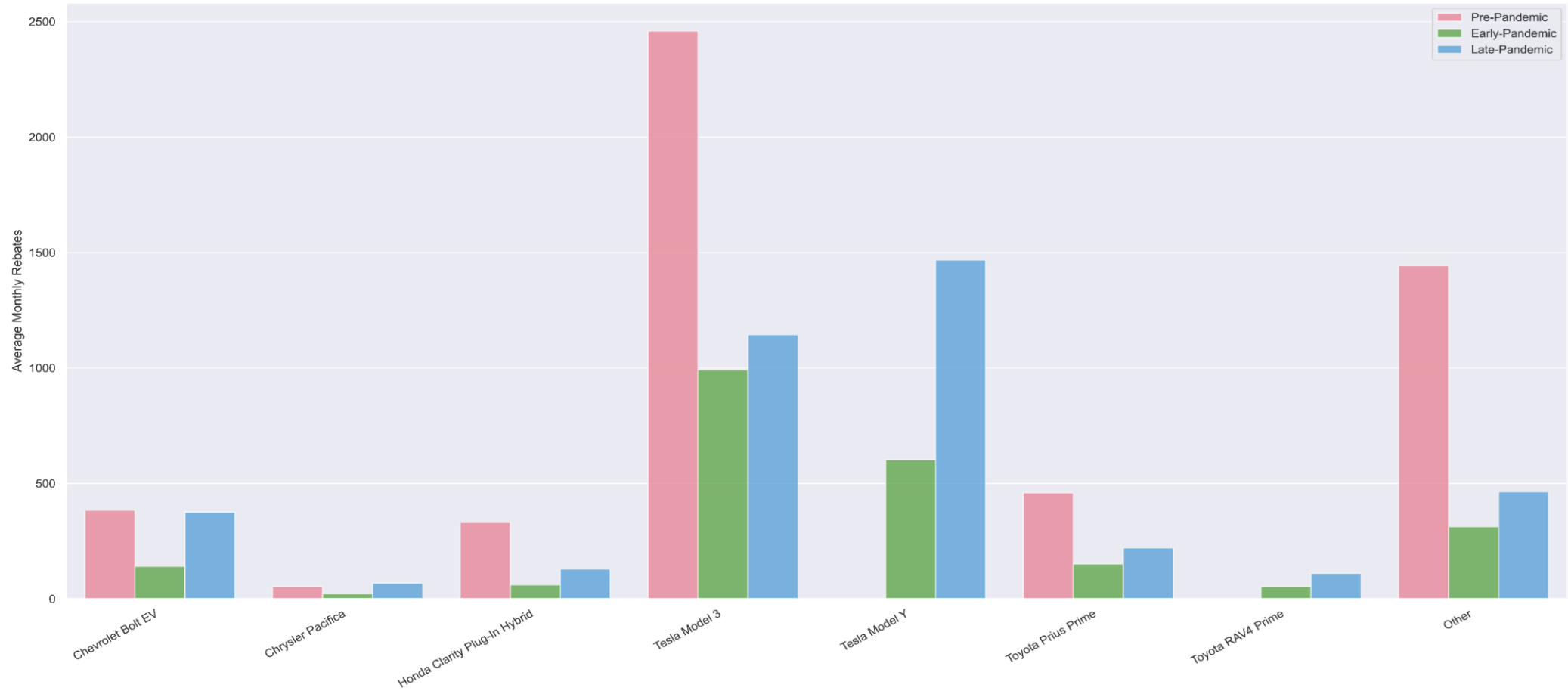
Pre-Pandemic: Jan. 2019 – Feb. 2020, Early-Pandemic: Mar. 2020–Aug. 2020, Late-Pandemic: Sep 2020–Feb.2021.
Rebates as of April 2021.

Average Monthly Increased Rebates by Model and Time
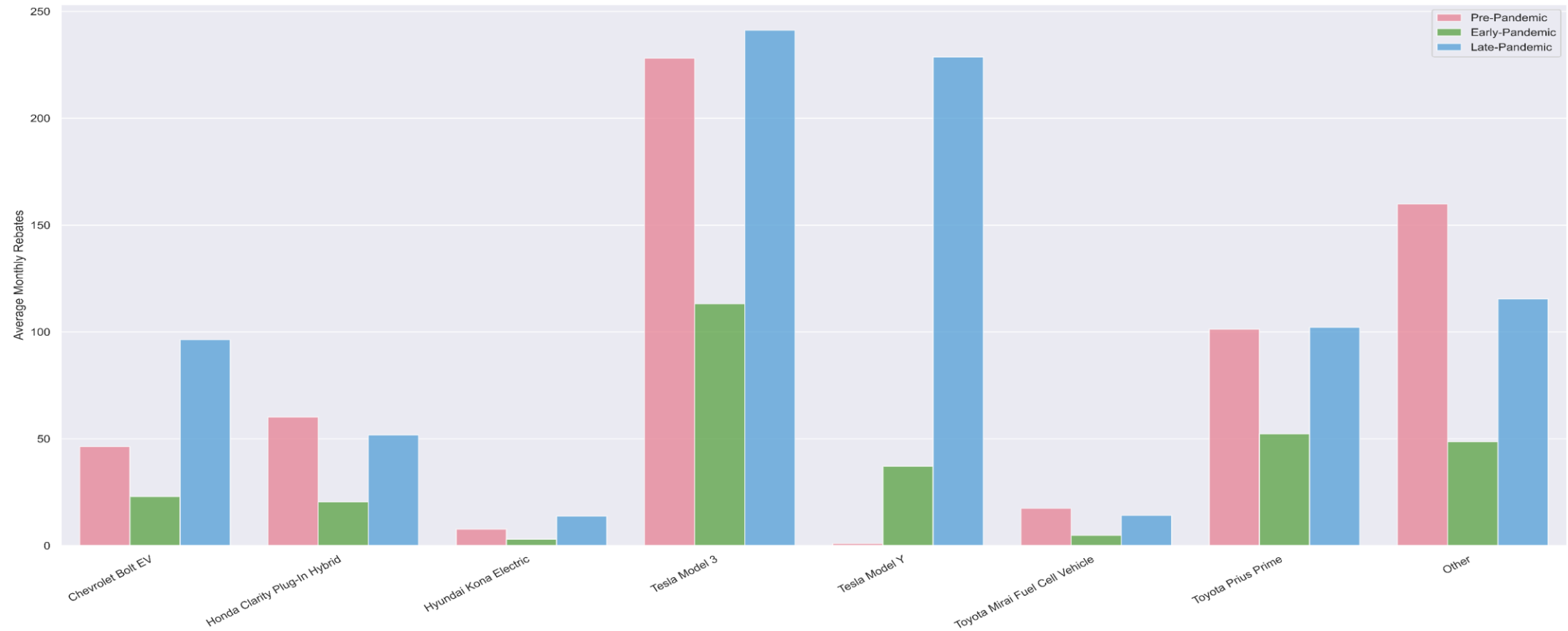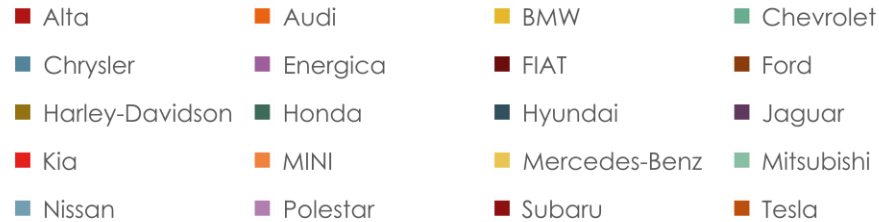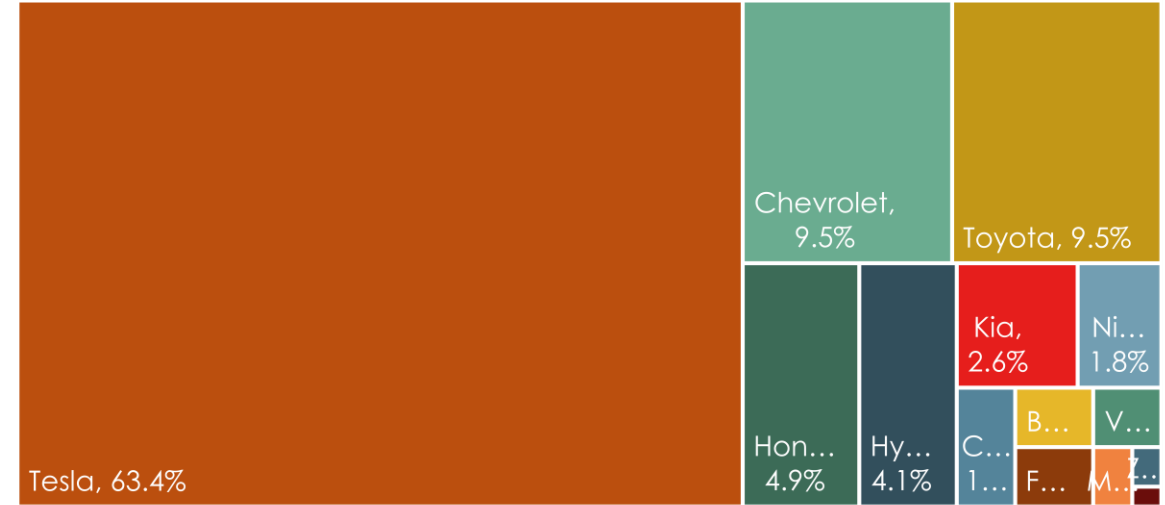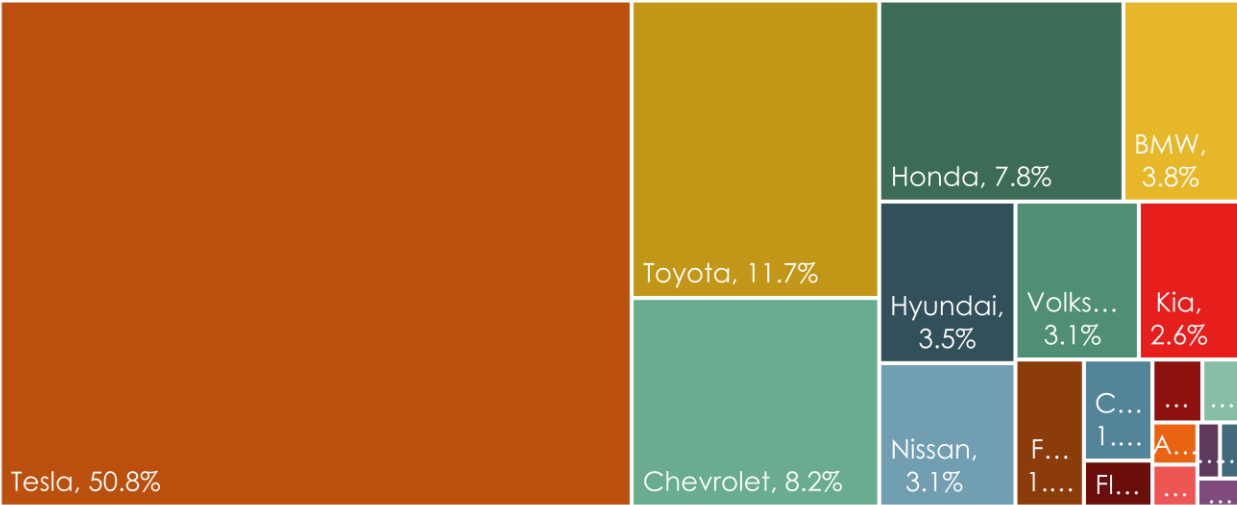

Pre-Pandemic: Jan. 2019 – Feb. 2020, Early-Pandemic: Mar. 2020–Aug. 2020, Late-Pandemic: Sep 2020–Feb.2021.
Rebates as of April 2021.

Percent Share of Applications by Vehicle Make
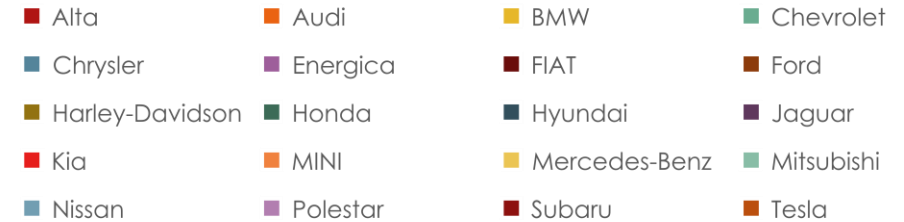
Forecast Variability and Rebated Tesla Purchase Rhythm

Standard Rebates
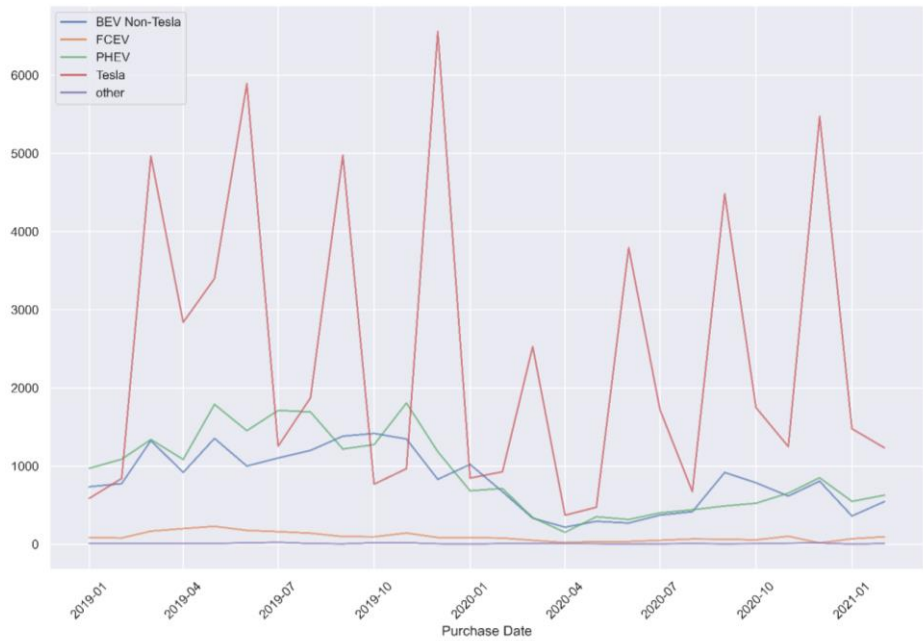
Increased Rebates
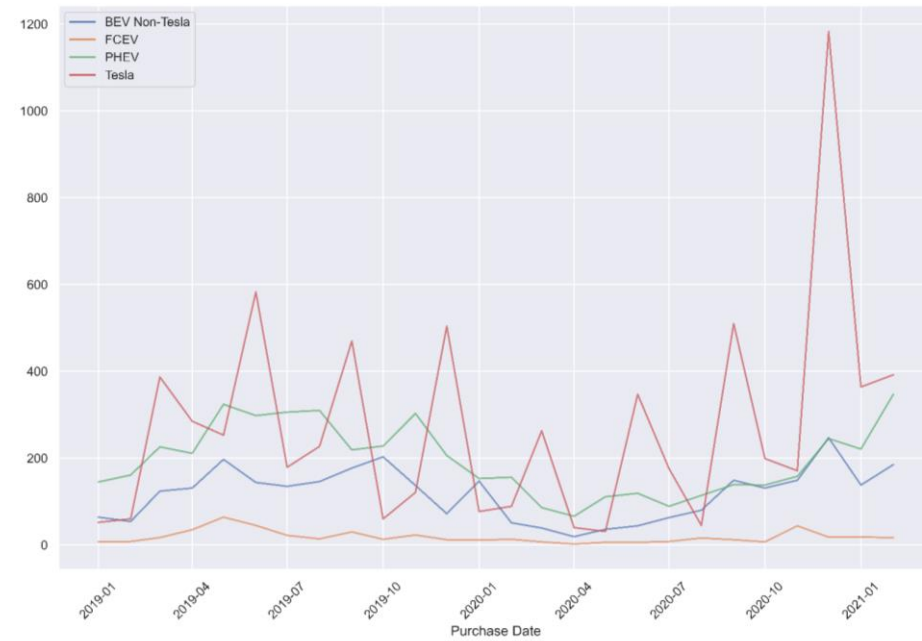
Rebates as of April 2021.

Projected Rebate Demand

Method Overview: Prophet

- Based on open-source tools developed by Facebook https://facebook.github.io/prophet/

- Simulates market conditions and rebate demand based on estimates of market recovery following the COVID-19 pandemic

- Includes estimates of the impact of CFR, increasing the LMI-IR income threshold to 400% FPL, the PHEV minimum electric-range change, and the impact of the waitlist on rebate demand

- Adjusts for the large increase in sales after the release of the Tesla Model 3 in 2018 and the pent-up demand in winter 2020-21

- Adjusts for increased uncertainty due to rapid increase in LMI-IR demand in Spring 2021

- Assumes linear growth for most vehicle categories and rebate types

- Assumes state and federal incentives remain constant

Rebate and EV Sales Data

CVRP Rebate Data: March 2010–May 2021

EV Sales Data: March 2010–January 2021*

* Contains content from IHS Markit © 2021

Funding Demand Over Time
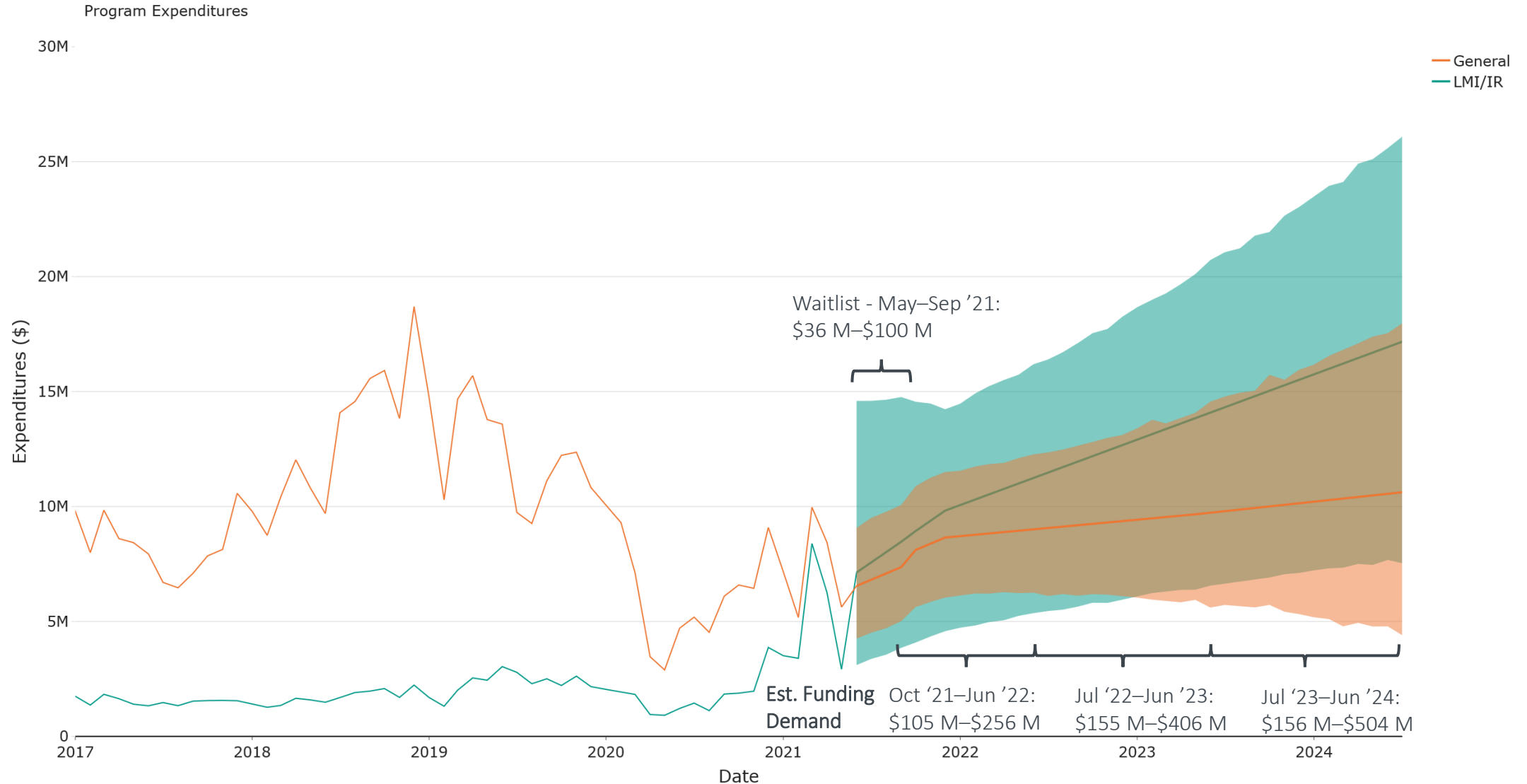
Ribbons indicate min. and max. estimates in three-year demand estimates

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Three-year Program Demand Estimates: Fiscal Years

Year	Rebate Type	Projected Funding Demand (millions)			Projected Rebates (thousands)		
		Min.	Median	Max.	Min.	Median	Max.
Waitlist: May 19, 2021 – Sep 30, 2021	Standard and DAC-Fleet Increased	$21	$30	$41	10	14	19
	Lower-Income Increased Rebates	$15	$32	$60	3	7	13
	Total Need	$36	$63	$100	13	21	32
Oct 2021 – Jun 2022	Standard and DAC-Fleet Increased	$59	$84	$112	28	40	53
	Lower-Income Increased Rebates	$46	$98	$145	10	22	32
	Total Need	$105	$182	$256	38	61	86
Jul 2022 – Jun 2023	Standard and DAC-Fleet Increased	$78	$120	$171	36	56	81
	Lower-Income Increased Rebates	$77	$164	$235	17	36	52
	Total Need	$155	$285	$406	53	93	134
Jul 2023 – Jun 2024	Standard and DAC-Fleet Increased	$65	$131	$208	31	60	99
	Lower-Income Increased Rebates	$91	$201	$296	20	44	66
	Total Need	$156	$331	$504	51	105	165
3-Year Average (excluding waitlist)		$139	$266	$389	47	86	128
3-Year Average (including waitlist in first year)		$151	$287	$422	52	93	139

Assumes no changes in federal or state incentive levels.

Progress Toward State Goals

Legend:
- Historical
- Middle Trajectory

5 M by 2030

1.5 M by 2025

1 M by 2023

Y-axis: 0.0M, 0.5M, 1.0M, 1.5M, 2.0M, 2.5M, 3.0M, 3.5M, 4.0M, 4.5M, 5.0M

X-axis: 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030
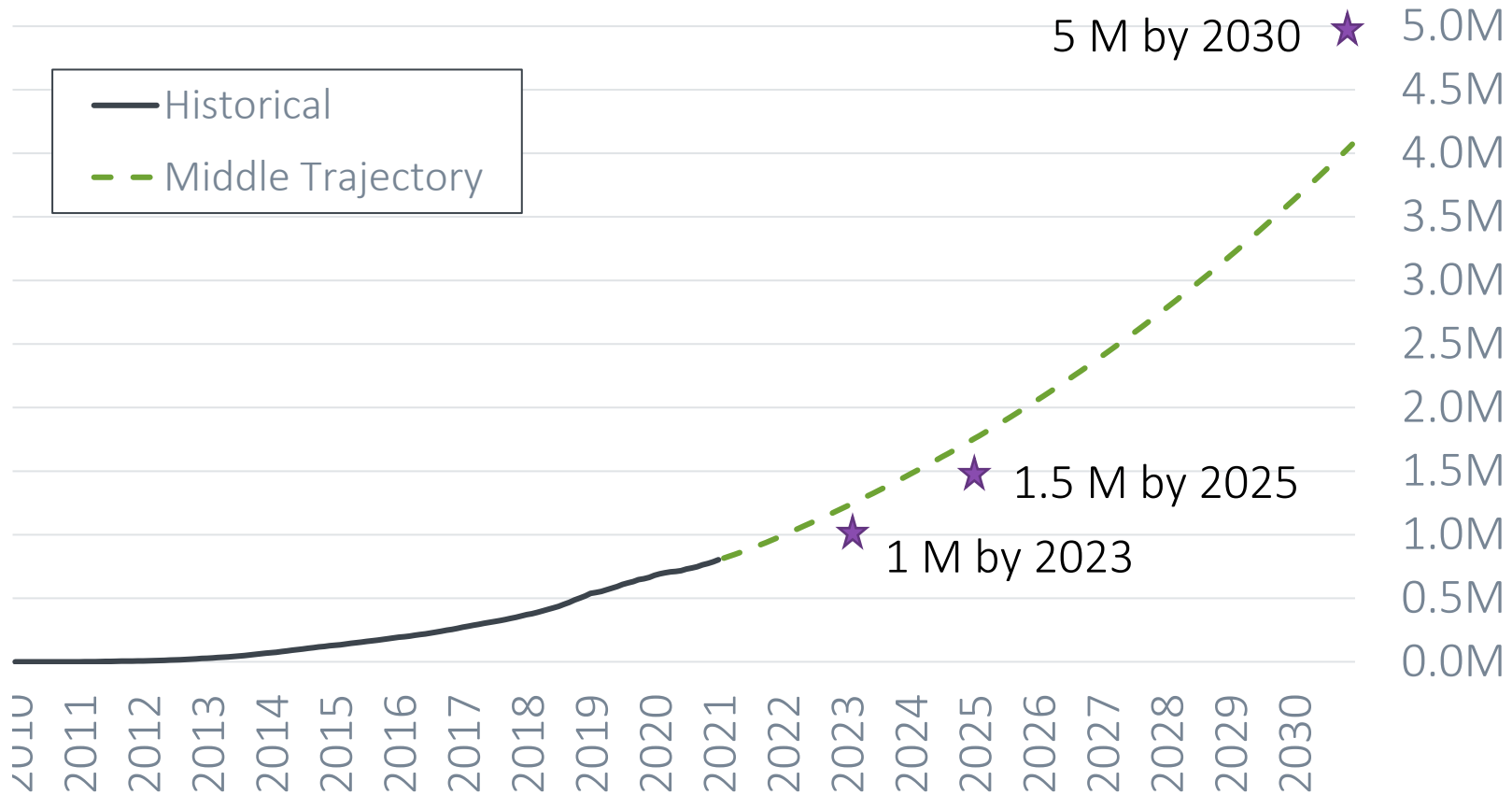
Contains content from IHS Markit © 2020.

Estimated Funding Needed to Reach 16% Market Share

- Utilizes CSE's Caret-EV Analyzer decision-making platform

- Assumes:
  - 40% CVRP participation
  - a $7,500 federal tax credit incentive with a $70k MSRP cap

Projected Accomplishment Date	Summer 2024
Estimated Cost	$1.1 Billion

Steep Growth Needed to Reach 100% Market Share
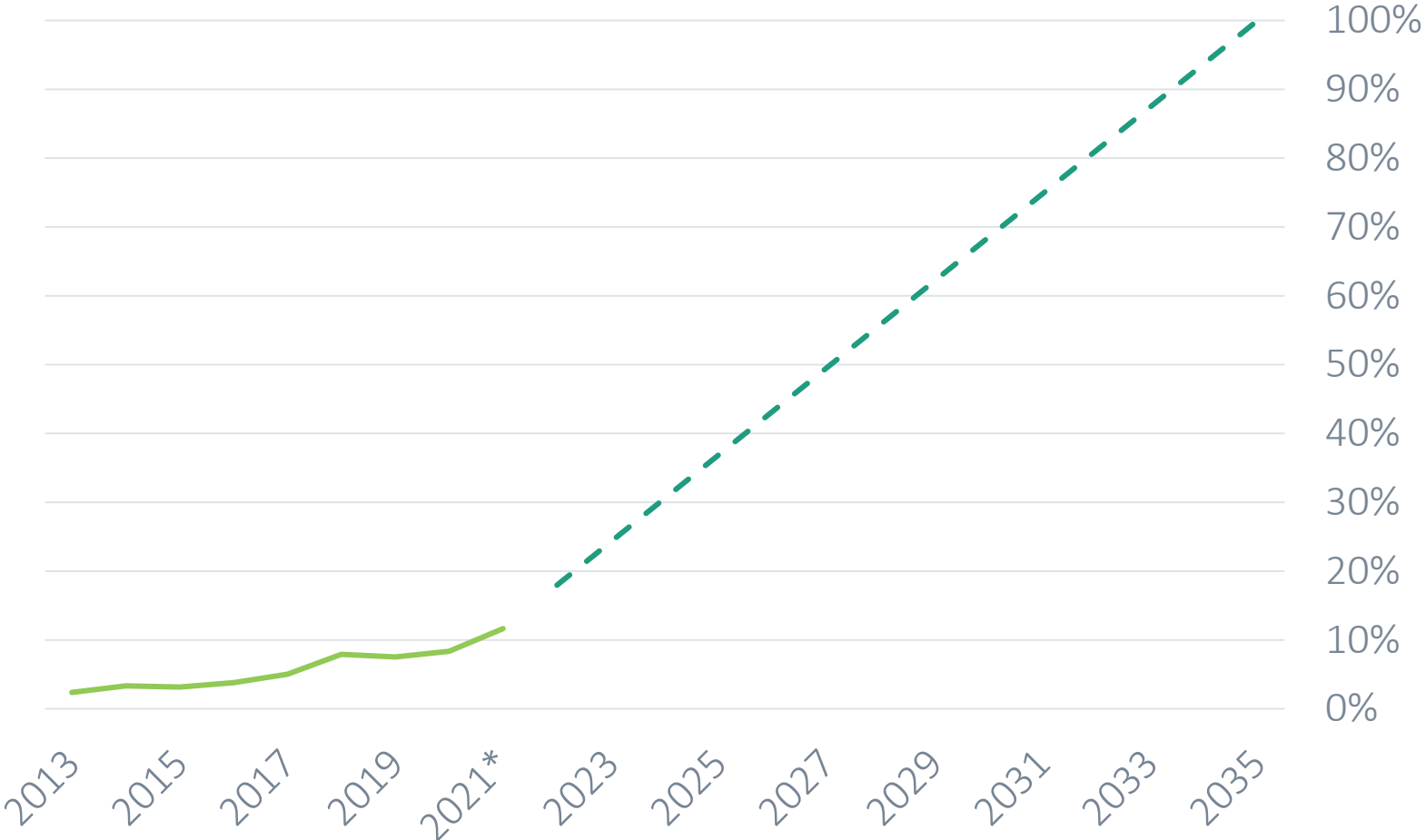
Historical market share: Alliance for Automotive Innovation Electric Vehicle Sales Dashboard
*2021 partial

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Additional Program Context

Three-year Program Demand Estimates: LMI-IR

Time Period	Projected Funding Demand (millions)			Projected Rebates (thousands)		
	Min.	Median	Max.	Min.	Median	Max.
Waitlist: May 19, 2021 – Sep 30, 2021	$15	$32	$60	3	7	13
Oct 2021 – Jun 2022	$46	$98	$145	10	22	32
Jul 2022 – Jun 2023	$77	$164	$235	17	36	52
Jul 2023 – Jun 2024	$91	$201	$296	20	44	66
3-Year Average (excluding waitlist)	$72	$154	$225	16	34	50
3-Year Average (including waitlist in first year)	$77	$165	$245	17	37	55

Assumes no changes in federal or state incentive levels.

Estimated End of Funding for an LMI-IR-only Program

Funding	Estimated end of funding		
	Low	Middle	High
$134 M	Oct 2022	Apr 2022	Feb 2022
$175 M	Apr 2023	Jul 2022	Apr 2022

Assuming $63 million will be needed to fund the standard and increased rebate waitlists

Draft: Increased Rebate Participation Relative to FPL

Income Relative to FPL	Percent of Increased Rebates Since Feb. 2021†
< 100%	6%
100% to 200%	28%
200% to 300%	33%
300% to 400%	33%

Income Relative to FPL	Percent Rebate Essential	
	2017–2019*	Since Feb. 2021
< 300%	66%	TBD
300% to 400%	53%	TBD
≥ 400%	50%	TBD

† GGRF-funded completed applications as of May 28, 2021

* Weighted survey responses from the CVRP Consumer Survey 2017–2019 edition.

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Draft: Potential Budgetary Impact of Standard Rebate Reduction
(using projected Year 1, impact in millions)

BEV Standard Rebate Reductions

PHEV Standard Rebate Reduction	$0	$200	$400	$600	$800	$1,000	$1,200	$1,400	$1,600	$1,800
$0	$0.0	$7.7	$15.4	$23.1	$30.8	$38.5	$46.3	$54.0	$61.7	$69.4
$100	$0.1	$7.8	$15.5	$23.2	$31.0	$38.7	$46.4	$54.1	$61.8	$69.5
$200	$0.2	$8.0	$15.7	$23.4	$31.1	$38.8	$46.5	$54.2	$61.9	$69.6
$300	$0.4	$8.1	$15.8	$23.5	$31.2	$38.9	$46.6	$54.3	$62.0	$69.7
$400	$0.5	$8.2	$15.9	$23.6	$31.3	$39.0	$46.7	$54.4	$62.2	$69.9
$500	$0.6	$8.3	$16.0	$23.7	$31.4	$39.2	$46.9	$54.6	$62.3	$70.0
$600	$0.7	$8.4	$16.1	$23.9	$31.6	$39.3	$47.0	$54.7	$62.4	$70.1
$700	$0.8	$8.6	$16.3	$24.0	$31.7	$39.4	$47.1	$54.8	$62.5	$70.2
$800	$1.0	$8.7	$16.4	$24.1	$31.8	$39.5	$47.2	$54.9	$62.6	$70.4
$900	$1.1	$8.8	$16.5	$24.2	$31.9	$39.6	$47.3	$55.1	$62.8	$70.5

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Assuming -2.5 price elasticity of demand and an illustrative $39,000 average vehicle price, a $200 price increase is associated with a 1.3% decrease in rebated vehicle sales

Median projected scenario. Year 1: October 2021–June 2022, not including waitlist.

Draft: Rebates by Gross Annual Income and Filing Status

Gross Annual Income	Single	Head-of-Household and others	Married Filing Jointly
< $100,000	74%	54%	16%
< $105,000	76%	58%	18%
< $110,000	80%	62%	20%
< $115,000	83%	65%	22%
< $120,000	86%	69%	24%
< $125,000	88%	71%	27%
< $130,000	91%	74%	29%
< $135,000	93%	77%	32%
< $140,000	95%	79%	34%
< $145,000	97%	81%	37%
< $150,000	99%	84%	39%
< $155,000	99%	86%	42%
< $160,000	99%	87%	45%
< $165,000	99%	89%	47%
< $170,000	99%	91%	50%
< $175,000	99%	92%	52%
< $180,000	100%	94%	54%
< $185,000	100%	95%	57%
< $190,000	100%	96%	59%
< $195,000	100%	97%	61%
< $200,000	100%	98%	64%
> $200,000	100%	100%	100%

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Income Verified Applications submitted from Nov 2016 through Apr 2021

Eligible Vehicles by EPA Vehicle Class Group and Model-min. MSRP

Vehicle Model	Vehicle Class Groups	Model Min. MSRP
Polestar 2	Cars	$59,900
Volvo XC40 Recharge	SUVs/Vans	$53,990
Tesla Model Y	SUVs/Vans	$52,490
BMW i3 REx	Cars	$48,300
BMW i3	Cars	$44,450
Ford Mustang Mach-E	Cars	$42,895
Chrysler Pacifica	SUVs/Vans	$39,995
Volkswagen ID.4	SUVs/Vans	$39,995
Kia Niro Electric	Cars	$38,500
Toyota RAV4 Prime	SUVs/Vans	$38,100
Hyundai Kona Electric	Cars	$36,950
Chevrolet Bolt EV	Cars	$36,620
Honda Clarity Electric	Cars	$36,620
Tesla Model 3	Cars	$35,000
Kia Soul EV	Cars	$33,950
Honda Clarity Plug-In Hybrid	Cars	$33,400
Chevrolet Volt	Cars	$33,220
Ford Escape Plug-in Hybrid	SUVs/Vans	$33,075
FIAT 500e	Cars	$32,995
Volkswagen e-Golf	Cars	$30,495
Hyundai Ioniq Electric	Cars	$30,315
Nissan LEAF	Cars	$29,990
MINI Cooper SE	Cars	$29,900
smart Electric Fortwo	Cars	$23,800

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Year 1 Standard Fleet Rebate Funding Demand Projections

January 2020–November 2020

Standard Fleet, 2%

Other, 98%
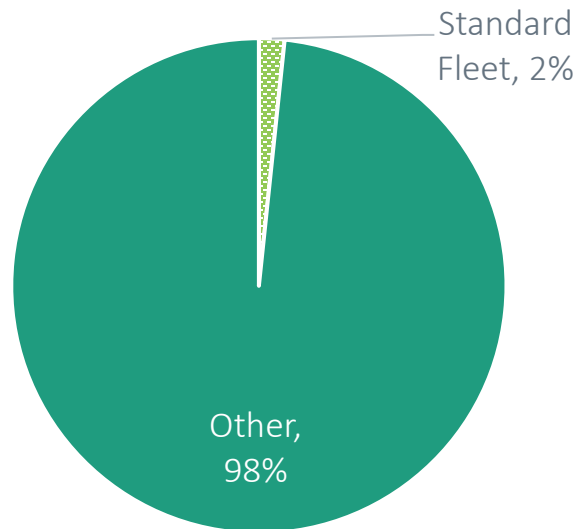
	Min.	Med.	Max.
Projected Standard Fleet Demand Year 1*	$4.2 M	$6.2 M	$8.9 M

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*Year 1: October 2021–June 2022, not including waitlist.

2019 Percent of Market Rebated

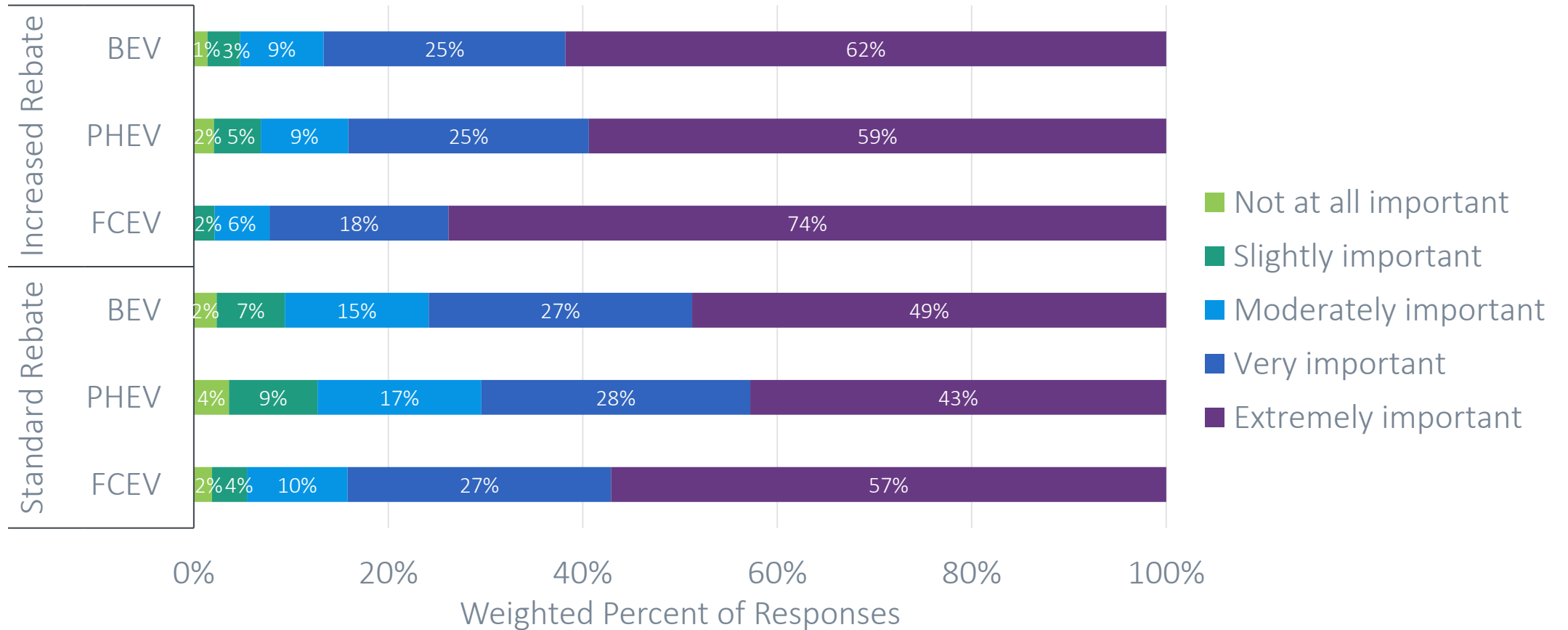| Vehicle Category	Percent Rebated
BEV	47%
PHEV	38%
FCEV	90%

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Based on 2019 New Vehicle Registration data from IHS Markit and CVRP Rebate Data

Rebate Essentiality by Rebate Type

Rebate Type	Percent Rebate Essential
Standard	53%
Increased	69%

CVRP Consumer Survey 2017–19 edition

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Rebate Essentiality by Rebate Type and Vehicle Category

CVRP Consumer Survey 2017–19 edition

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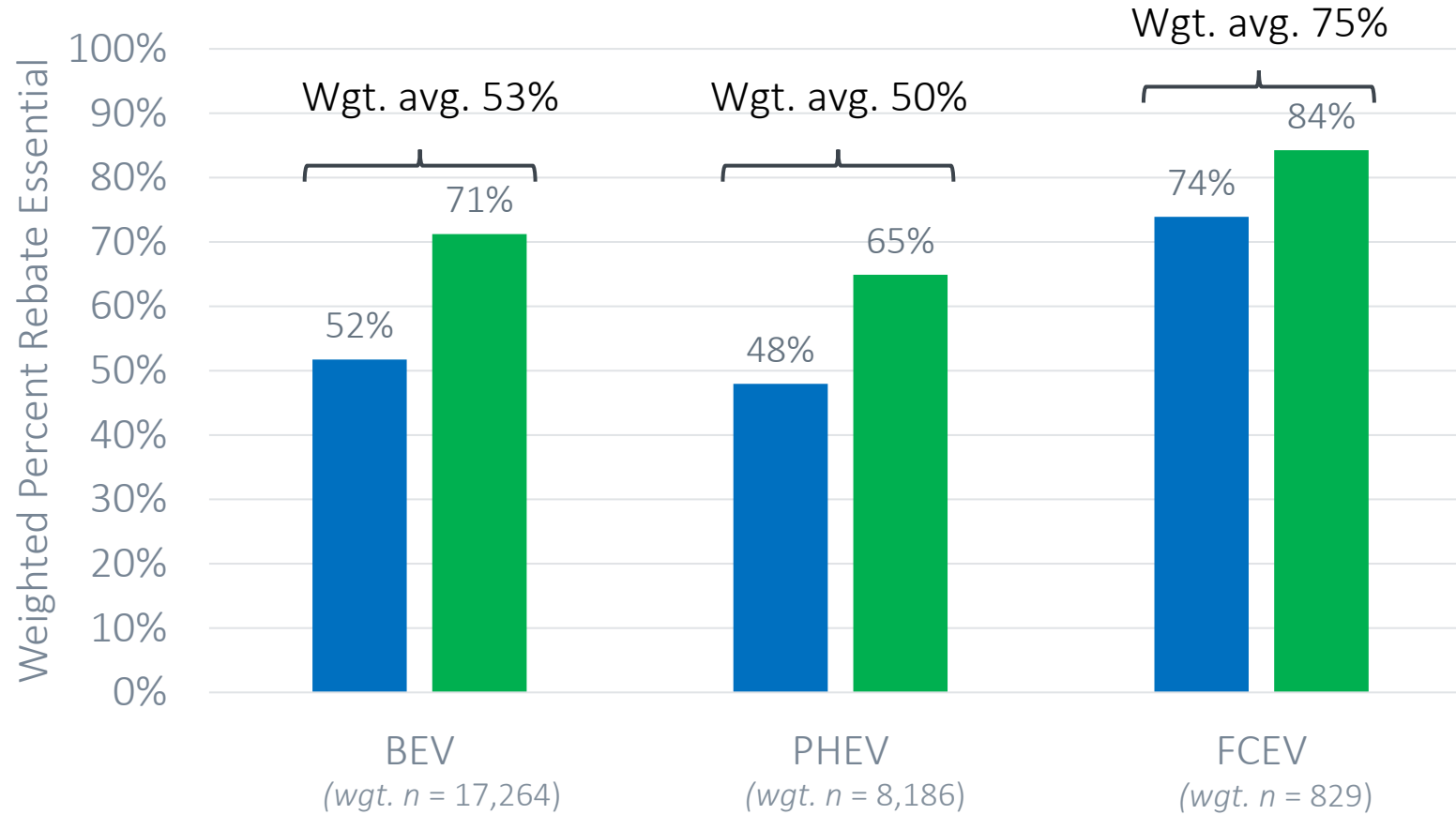
CVRP Rebate Importance by Vehicle Category and Rebate Type

CVRP Consumer Survey 2017–19 edition, weighted n = 26,013
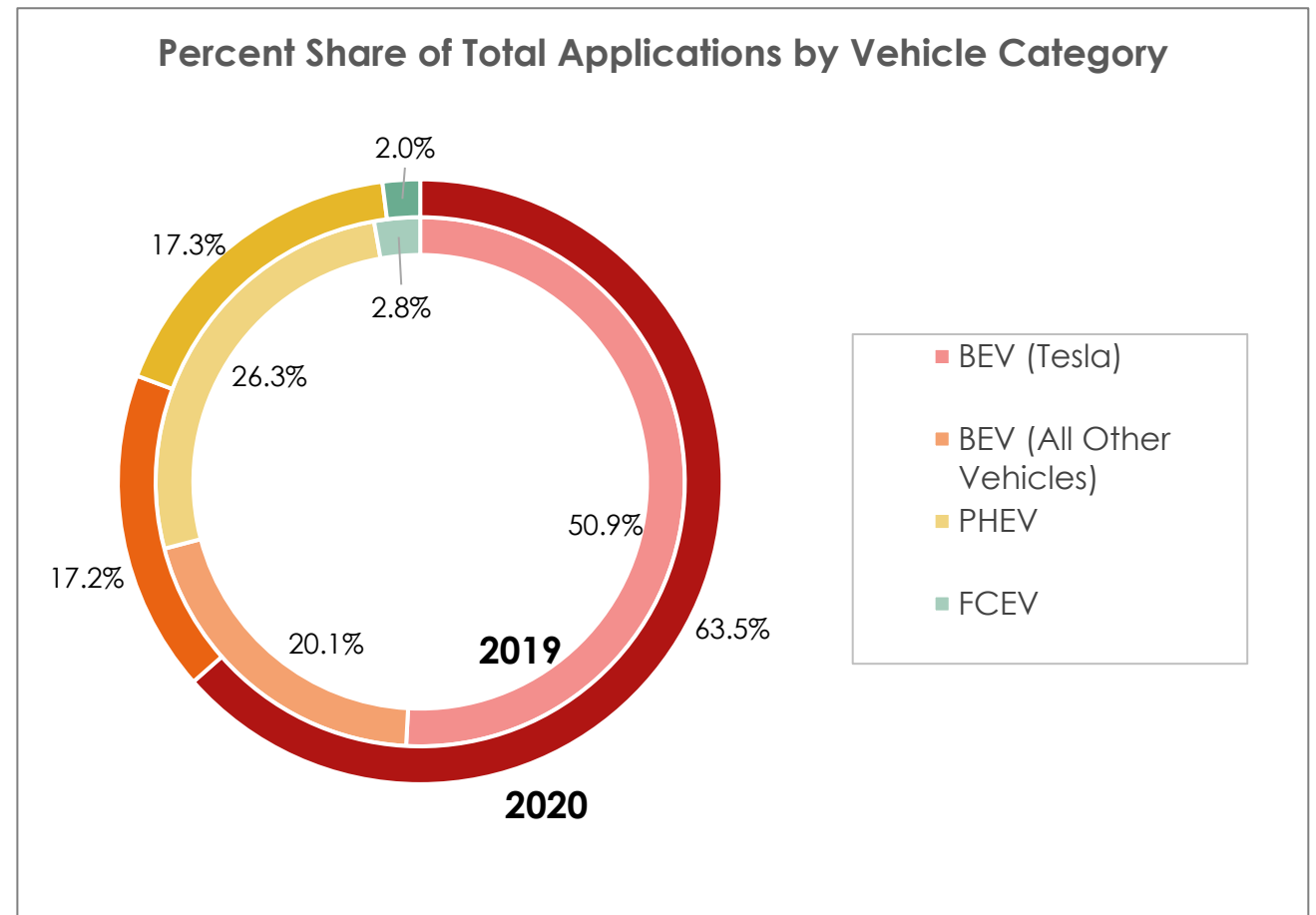
Appendix

Percent Share of Applications by Vehicle Category
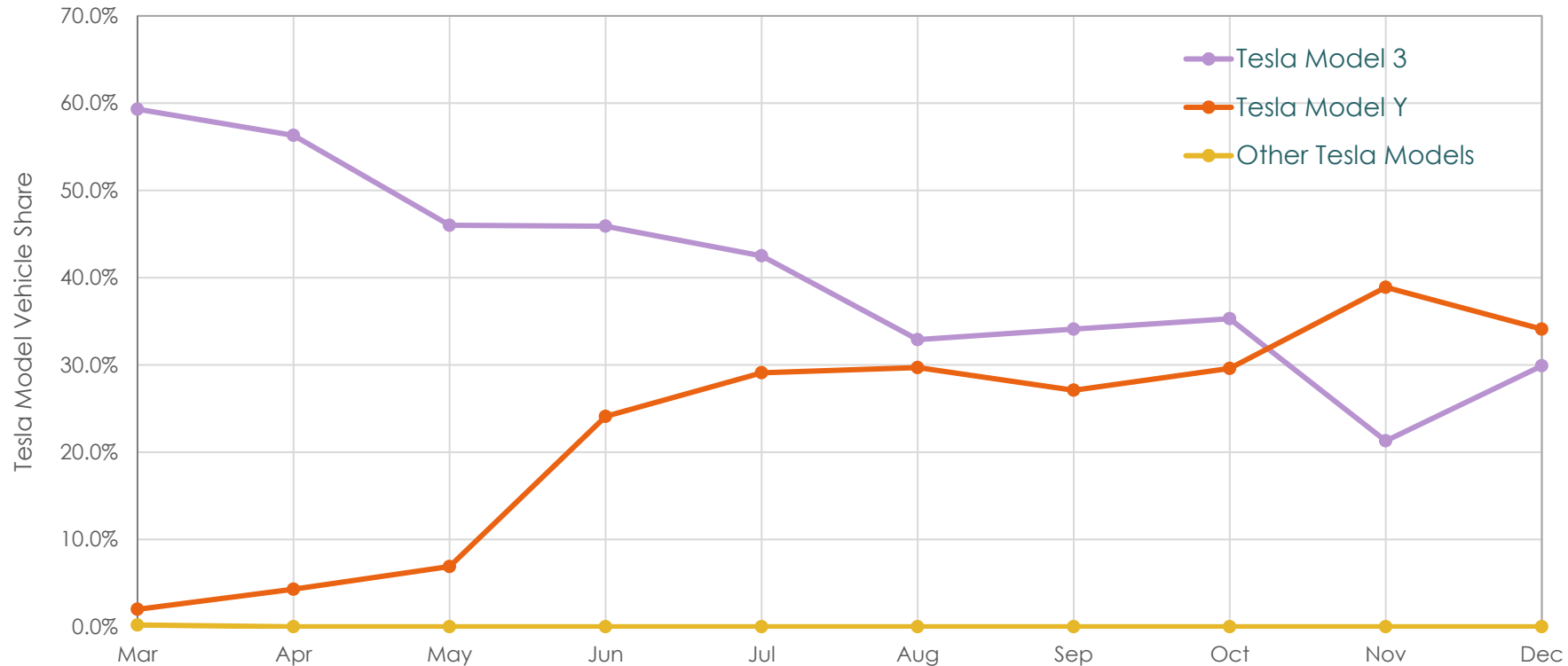
- Percent share of Tesla applications increased by 12.6% in 2020 while all other vehicle categories decreased
- PHEV share decreased by 9%
- BEV share decreased by 2.9%

Percent Share of Total Applications by Vehicle Category

2.0%
17.3%
2.8%
26.3%
17.2%
50.9%
20.1%
63.5%
2019
2020

- BEV (Tesla)
- BEV (All Other Vehicles)
- PHEV
- FCEV

Percent Share of Applications by Tesla Model

Percent share of **Tesla** vehicle applications **increased** during Covid due to **Tesla Model Y** sales starting in June 2020
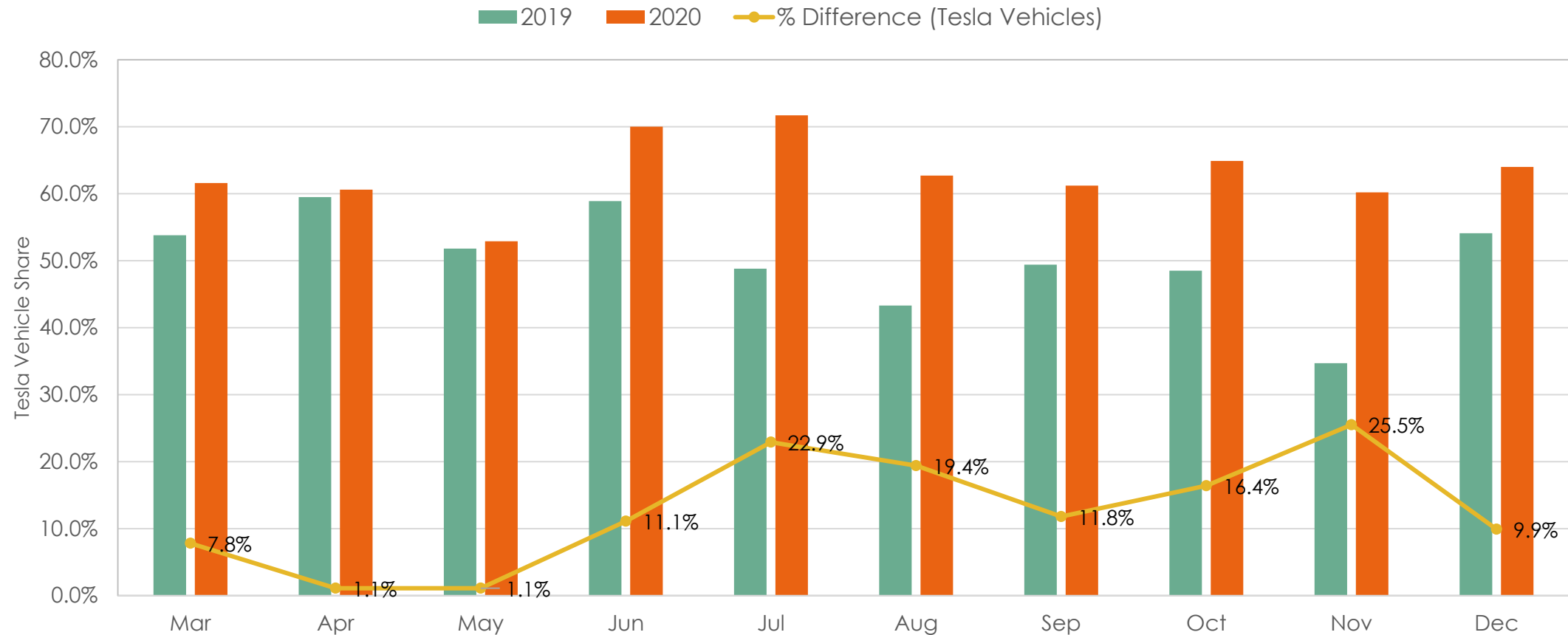

Tesla Models Vehicle Share in 2020

"Other Tesla Models" include Tesla Model S and Model X which are no longer eligible due to MSRP cap
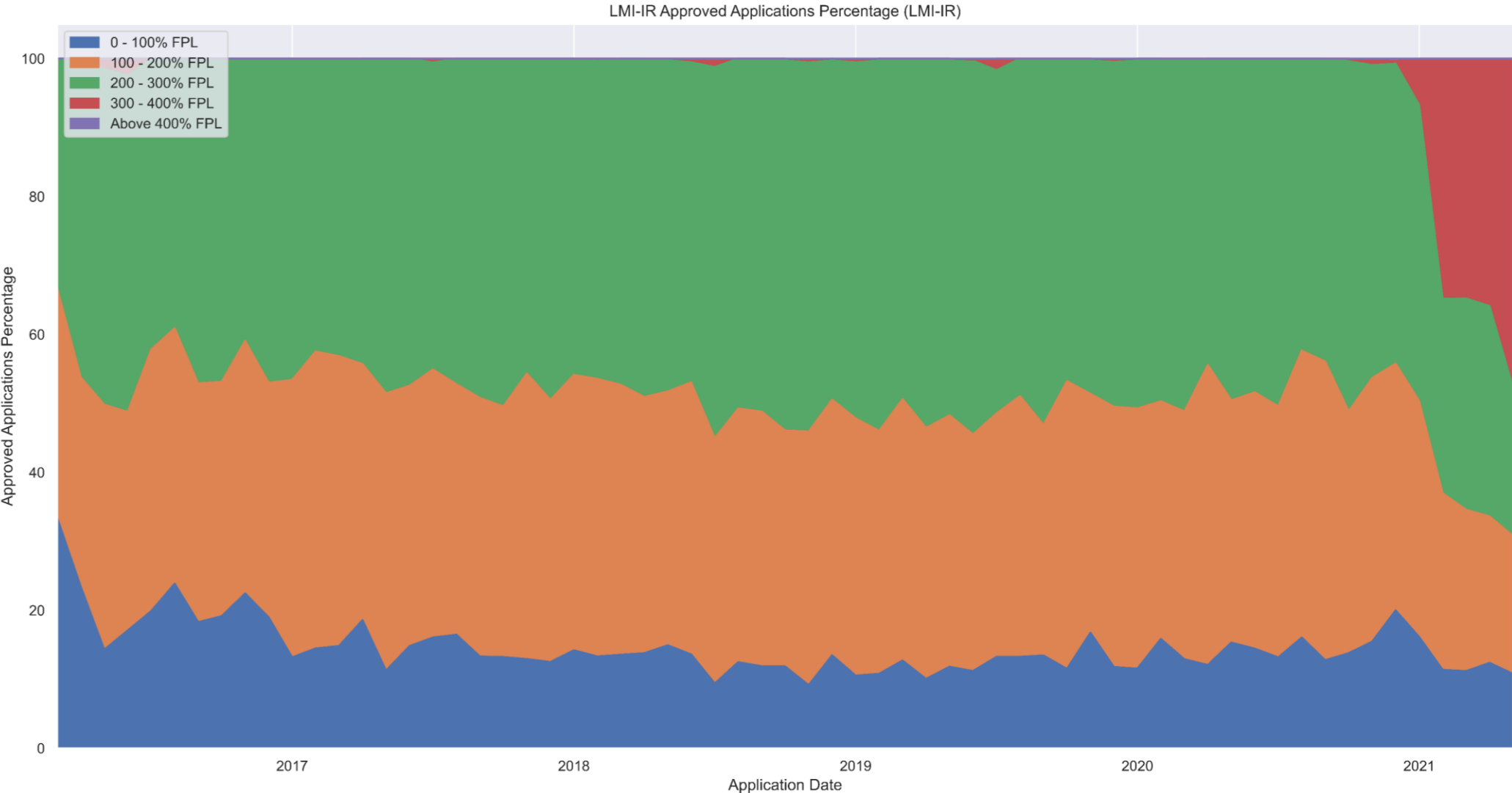
Comparing Percent Share of Tesla Applications in 2019 to 2020

Percent share of **Tesla** applications **increased** by more than **10%** during months June to December

Tesla's Share in Total Applications and Percentage Difference in Total Applications

■ 2019 ■ 2020 ●— % Difference (Tesla Vehicles)

7.8% 1.1% 1.1% 11.1% 22.9% 19.4% 11.8% 16.4% 25.5% 9.9%

Mar Apr May Jun Jul Aug Sep Oct Nov Dec

Tesla Vehicle Share

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300–400% FPL participants now a substantial portion of LMI-IR

LMI-IR Approved Applications Percentage (LMI-IR)

300–400% FPL participants now a substantial portion of LMI-IR

LMI-IR Approved Applications Percentage (LMI-IR)

Legend:
- 0 - 100% FPL
- 100 - 200% FPL
- 200 - 300% FPL
- 300 - 400% FPL
- Above 400% FPL

Y-axis: Approved Applications Percentage
X-axis: Application Date (Nov, Dec, Jan 2021, Feb, Mar, Apr, May)