CVRP 2020 Data Brief: Incentive Influence

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Nicholas Pallonetti – Research Analyst, CSE

with thanks to J. Bowers and others at the Center for Sustainable Energy (CSE)
Outline: Incentive Influence (during the onset of COVID-19)

I. **Program Design** (data context)
II. **Incentive Influence**
   A. State Rebates
   B. Federal Tax Credit
III. **Summary & Select Findings**

Additional Details & Resources

EVs = light-duty plug-in hybrid, battery, and fuel-cell electric vehicles (PHEVs, BEVx vehicles, BEVs, and FCEVs)
Base Rebate Amount for Most Individuals **Decreased $500**

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</tr>
</thead>
<tbody>
<tr>
<td>Fuel-Cell EVs</td>
<td>$3,000–$5,000 ‡</td>
<td>$1,500–$2,500 ‡</td>
<td>$2,500</td>
<td>$5,000</td>
<td>$5,000 *</td>
<td>$5,000**</td>
<td>$4,500***</td>
</tr>
<tr>
<td>Battery EVs †</td>
<td>$3,000–$5,000 ‡</td>
<td>$1,500–$2,500 ‡</td>
<td>$2,500</td>
<td>$2,500</td>
<td>$2,500 *</td>
<td>$2,500**</td>
<td>$2,000***</td>
</tr>
<tr>
<td>Plug-in Hybrid EVs</td>
<td>$3,000</td>
<td>$1,500</td>
<td>$1,500</td>
<td>$1,500</td>
<td>$1,500 *</td>
<td>$1,500**</td>
<td>$1,000***</td>
</tr>
<tr>
<td>Zero-Emission Motorcycles</td>
<td>$1,500</td>
<td>$900</td>
<td>$900</td>
<td>$900</td>
<td>$900</td>
<td>$900</td>
<td>$750</td>
</tr>
<tr>
<td>Neighborhood EVs</td>
<td>$1,500</td>
<td>$900</td>
<td>$900</td>
<td>$900</td>
<td>$900</td>
<td>None eligible</td>
<td>None eligible</td>
</tr>
<tr>
<td>Commercial Zero-Emission Veh.</td>
<td>$20,000</td>
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</tbody>
</table>

† Includes range-extended battery electric vehicles.  
‡ Amounts varied by ZEV type. For definitions, see CCR 1962.1.  
* Lower-income consumers eligible for an additional $1,500.  
** Lower-income consumers eligible for an additional $2,000.  
*** Lower-income consumers eligible for an additional $2,500.
<table>
<thead>
<tr>
<th>as of</th>
<th>Program Design</th>
<th>Shapes Outcomes</th>
<th>as of</th>
<th>Program Design</th>
<th>Shapes Outcomes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mar. 2010</td>
<td>Incentive stacking permitted</td>
<td></td>
<td>Dec. 2013</td>
<td>Rebates per year limit = 2</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Rebates per year limit = 20</td>
<td></td>
<td></td>
<td>Total rebate limit = 2</td>
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<tr>
<td>May 2014</td>
<td>18-month application window</td>
<td></td>
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<tr>
<td>as of</td>
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</tr>
<tr>
<td>Jan. 2018</td>
<td>$150k–$300k income cap on stacking HOV decal (only binding on FCEVs)</td>
<td></td>
<td>Jan. 2019</td>
<td>Stacking with CVAP grant not permitted (retroactive)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Rebate Now San Diego County preapproval pilot with point-of-sale option</td>
<td></td>
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</tr>
<tr>
<td>Dec. 2019</td>
<td>Base MSRP ≤ $60k (PEVs)</td>
<td></td>
<td>Apr. 2020</td>
<td>Stacking with CVAP grant permitted</td>
<td></td>
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<tr>
<td></td>
<td>≥ 35 UDDS electric miles</td>
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</tr>
<tr>
<td></td>
<td>+$2,500 † for income-qualified households (≤ 300% FPL), excl. ZEMs</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total rebates limit = 1 §</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>3-month application window ‡</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Apr. 2021</td>
<td>≥ 30 U.S. EPA electric miles (45 UDDS)</td>
<td></td>
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<tr>
<td></td>
<td>Rebate Now preapproval option limited to income-qualified households, expanded to include SJ Valley</td>
<td></td>
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</tr>
</tbody>
</table>

PEVs = plug-in EVs. FPL = Federal Poverty Level. ZEMs = zero-emission motorcycles. UDDS = Urban Dynamometer Driving Schedule. HOV = high-occupancy-vehicle. FCEVs = fuel-cell EVs. CVAP = Clean Vehicle Assistance Program. MSRP = manufacturer suggested retail price.

† Change due to $500 decrease in standard rebate amounts (previous slide). § A second rebate can be approved for a FCEV if the first rebate was for a PEV. ‡ COVID exemptions on application window effectively delayed implementation until 4/15/2021.
2020 Results/Trends Should be Interpreted with Caution (COVID) Applications Saw Dramatic Decline But Significant Recovery


12% applied in 2021.

## CVRP Consumer Survey Editions

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

<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td><strong>Survey Responses (total n)</strong></td>
<td>19,460</td>
<td>11,611</td>
<td>8,957</td>
<td>32,524</td>
<td>72,552</td>
</tr>
<tr>
<td><strong>Program Population (N)</strong>*</td>
<td>91,100</td>
<td>45,700</td>
<td>46,800</td>
<td>193,200</td>
<td>376,800</td>
</tr>
</tbody>
</table>

*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.
## CVRP Consumer Survey Data Used
(shows rebates to individuals for plug-in EVs only)

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Program Population (N)</strong>*</td>
<td>19,460**</td>
<td>11,611**</td>
<td>8,957**</td>
<td>32,524**</td>
<td>14,757</td>
<td>8,991</td>
<td>4,331**</td>
</tr>
</tbody>
</table>

* ~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.
Incentive Influence
Incentive Influence: Select Publications with Related Content
(reverse chronological, as of 2/2022)


Incentive Influence: Select Presentations with Related Content
(reverse chronological, as of 2/2022)

• 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 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
• 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
• Characterizing California Electric Vehicle Consumer Segments
Previous Work on *Rebate Essentials*: Summary

- **BECC Conference presentation** ([Williams & Johnson 2016](#))
- **TRR journal article** ([Johnson and Williams 2017](#))
- **National Academies TRB poster** ([Williams and Johnson 2017](#))
- **EVS 31 paper** ([Williams & Anderson 2018](#))
- **Report for NYSERDA** ([Williams & Anderson 2021](#))
Rebate Influence
(during the onset of COVID-19)
How important was the state rebate in making it possible for you to acquire your clean vehicle?

- Not at all important
- Slightly important
- Moderately important
- Very important
- Extremely important

82% = “Rebate Important”

2020

Rebate Importance: 2019 vs. 2020

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


$n$-values are filtered and question-specific. 2020 weights specific to 2020 purchases/leases.
Rebate Essentiality Over Time: COVID Effect?

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

2016–2017 Edition: filtered, question-specific $n = 8,857$
**Rebate Essentiality Over Time: Tesla’s Effect**

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

<table>
<thead>
<tr>
<th>CVRP Consumer Survey Edition or Purchase/Lease Year</th>
<th>Weighted Percent of Rebates</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013–2015</td>
<td>Non-Tesla: 50%</td>
</tr>
<tr>
<td></td>
<td>Tesla: 24%</td>
</tr>
<tr>
<td>2015–2016</td>
<td>Non-Tesla: 61%</td>
</tr>
<tr>
<td></td>
<td>Tesla: 35%</td>
</tr>
<tr>
<td>2016–2017</td>
<td>Non-Tesla: 59%</td>
</tr>
<tr>
<td></td>
<td>Tesla: 45%</td>
</tr>
<tr>
<td>2017–2020: CY 2018</td>
<td>Non-Tesla: 53%</td>
</tr>
<tr>
<td></td>
<td>Tesla: 47%</td>
</tr>
<tr>
<td>2017–2020: CY 2019</td>
<td>Non-Tesla: 55%</td>
</tr>
<tr>
<td></td>
<td>Tesla: 49%</td>
</tr>
<tr>
<td>2017–2020: CY 2020</td>
<td>Non-Tesla: 49%</td>
</tr>
<tr>
<td></td>
<td>Tesla: 31%</td>
</tr>
</tbody>
</table>


2015–2016 Edition: filtered, question-specific \( n = 11,462 \)

2016–2017 Edition: filtered, question-specific \( n = 8,857 \)

Rebate Essentiality by Vehicle and Rebate Type
2020 purchases/leases

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

<table>
<thead>
<tr>
<th>Weighted Percent of Rebates</th>
<th>All Types</th>
<th>PHEV</th>
<th>BEV</th>
<th>BEV: Tesla</th>
<th>BEV: non-Tesla</th>
<th>Standard Rebates</th>
<th>Increased Rebates</th>
</tr>
</thead>
<tbody>
<tr>
<td>0%</td>
<td>100%*</td>
<td>18%</td>
<td>82%</td>
<td>63%</td>
<td>19%</td>
<td>88%</td>
<td>12%</td>
</tr>
<tr>
<td>20%</td>
<td>38%</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>40%</td>
<td>47%</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>60%</td>
<td>36%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>80%</td>
<td>31%</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>100%</td>
<td>50%</td>
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<td></td>
<td></td>
<td></td>
<td>66%</td>
</tr>
</tbody>
</table>

* Percentages in white inside columns are the percent of total rebates given to individual consumers. Rebate Essentiality percentages are calculated using the CVRP Consumer Survey, 2017–2020 Edition. Filtered, question-specific n = 4,304.
Rebate Essentiality by Vehicle and Rebate Type
2019 & 2020 purchases/leases

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

<table>
<thead>
<tr>
<th></th>
<th>2019</th>
<th>2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>All Types</td>
<td>52%</td>
<td>38%</td>
</tr>
<tr>
<td>PHEV</td>
<td>51%</td>
<td>47%</td>
</tr>
<tr>
<td>BEV</td>
<td>52%</td>
<td>36%</td>
</tr>
<tr>
<td>BEV: Tesla</td>
<td>49%</td>
<td>31%</td>
</tr>
<tr>
<td>BEV: non-Tesla</td>
<td>59%</td>
<td>50%</td>
</tr>
<tr>
<td>Standard Rebates</td>
<td>50%</td>
<td>34%</td>
</tr>
<tr>
<td>Increased Rebates</td>
<td>70%</td>
<td>66%</td>
</tr>
</tbody>
</table>

* Percentages in white inside columns are the percent of total rebates given to individual consumers. Rebate Essentiality percentages are calculated using the 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.
Rebate Essentiality by Vehicle and Rebate Type Over Time

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

Rebate Essentiality by Vehicle and Rebate Type Over Time: Tesla’s Effect

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

Rebate Essentiality by Vehicle Class
2020 purchases/leases

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

Rebate Essentiality by MSRP Decreases for Tesla
2020 purchases/leases

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


* 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

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

Model Minimum MSRP*

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 Decreases as Income Increases, Lower for Tesla**

2020 purchases/leases

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

**Bar Chart**

- **Weighted Percent of Rebates**
  - Less than $50,000: 67% (Non-Tesla), 51% (Tesla)
  - $50,000 to $99,999: 51% (Non-Tesla), 36% (Tesla)
  - $100,000 to $149,999: 43% (Non-Tesla), 29% (Tesla)
  - $150,000 to $199,999: 45% (Non-Tesla), 29% (Tesla)
  - $200,000 to $249,999: 44% (Non-Tesla), 28% (Tesla)
  - $250,000 to $299,999: 39% (Non-Tesla), 24% (Tesla)
  - $300,000 or more: 32% (Non-Tesla), 20% (Tesla)

**Legend**

- **Non-Tesla**
- **Tesla**

**Notes**

What might have happened without the rebate?
2017–2020 purchases/leases

If CVRP were not available, what do you think you would have done?

<table>
<thead>
<tr>
<th>Option</th>
<th>Weighted Percent of Rebates</th>
</tr>
</thead>
<tbody>
<tr>
<td>Purchased/leased this exact vehicle anyway</td>
<td>37%</td>
</tr>
<tr>
<td>Not made any purchase/lease at all</td>
<td>19%</td>
</tr>
<tr>
<td>Purchased/leased a less expensive version of the same model</td>
<td>14%</td>
</tr>
<tr>
<td>Purchased/leased a new non-PEV instead</td>
<td>12%</td>
</tr>
<tr>
<td>Purchased/leased a different new PEV</td>
<td>8%</td>
</tr>
<tr>
<td>Purchased/leased a used PEV</td>
<td>6%</td>
</tr>
<tr>
<td>Purchased/leased a used non-PEV instead</td>
<td>4%</td>
</tr>
</tbody>
</table>

Recent change in what might have happened without the rebate
2019 vs. 2020 purchases/leases

If CVRP were not available, what do you think you would have done?

- Purchased/leased this exact vehicle anyway: 36% (2019), 50% (2020)
- Not made any purchase/lease at all: 19% (2019), 13% (2020)
- Purchased/leased a less expensive version of the same model: 13% (2019), 11% (2020)
- Purchased/leased a new non-PEV instead: 12% (2019), 9% (2020)
- Purchased/leased a different new PEV: 9% (2019), 7% (2020)
- Purchased/leased a used PEV: 7% (2019), 6% (2020)
- Purchased/leased a used non-PEV instead: 5% (2019), 3% (2020)

Change in what might have happened without the rebate largely a Tesla effect
2020 purchases/leases

If CVRP were not available, what do you think you would have done?

- Purchased/leased this exact vehicle anyway: 38% (Tesla), 58% (overall)
- Not made any purchase/lease at all: 16% (Tesla), 12% (overall)
- Purchased/leased a less expensive version of the same model: 12% (Tesla), 11% (overall)
- Purchased/leased a new non-PEV instead: 7% (Tesla), 12% (overall)
- Purchased/leased a different new PEV: 6% (Tesla), 10% (overall)
- Purchased/leased a used PEV: 4% (Tesla), 9% (overall)
- Purchased/leased a used non-PEV instead: 2% (Tesla), 5% (overall)

2020 weights specific to 2020 purchases/leases. Filtered, question-specific n = 4,309.
Federal Tax Credit Influence
Importance of Federal Tax Credit
eligible* 2020 plug-in EV purchases/leases

“How important were each of the following factors [Federal Tax Incentives] in making it possible for you to acquire your clean vehicle?”

* Note: federal tax credit phase-out for Tesla began 1/1/2019 and concluded 12/31/2019. Phase out for GM began 4/1/2019 and concluded 3/31/2020. During Q1 2020, GM plug-in EVs were eligible for a reduced tax credit of $1,875.

Importance of Federal Tax Credit: Purchases vs. Leases
eligible* 2020 plug-in EVs

“How important were each of the following factors [Federal Tax Incentives] in making it possible for you to acquire your clean vehicle?”

- Purchases
- Leases

* Note: federal tax credit phase-out for Tesla began 1/1/2019 and concluded 12/31/2019. Phase out for GM began 4/1/2019 and concluded 3/31/2020. During Q1 2020, GM plug-in EVs were eligible for a reduced tax credit of $1,875.

Importance of Federal Tax Credit: GM’s Reduced Credit eligible* 2020 plug-in EV purchases/leases

“How important were each of the following factors [Federal Tax Incentives] in making it possible for you to acquire your clean vehicle?”

- Non-GM/Non-Tesla: up to $7,500
- GM (Q1 only): $1,875 *


During Q1 2020, GM plug-in EVs were eligible for a reduced tax credit of $1,875.

Extreme Importance of Federal Tax Credit Is **Increasing Even With Phase Out** (eligible* purchases/leases)


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**Percent rating tax credit *Extremely Important* in making it possible to acquire their *plug-in vehicle***

<table>
<thead>
<tr>
<th>CVRP Consumer Survey Edition</th>
<th>Weighted Percent of Rebates</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013–2015</td>
<td>45%</td>
</tr>
<tr>
<td>2015–2016</td>
<td>48%</td>
</tr>
<tr>
<td>2016–2017</td>
<td>49%</td>
</tr>
<tr>
<td>2017–2020</td>
<td>52%*</td>
</tr>
</tbody>
</table>
Extreme Importance of Federal Tax Credit Over Time
eligible* purchases/leases

Percent rating tax credit Extremely Important in making it possible to acquire their plug-in vehicle

<table>
<thead>
<tr>
<th>Year</th>
<th>Weighted Percent of Rebates</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013–2015</td>
<td>45%</td>
</tr>
<tr>
<td>2015–2016</td>
<td>48%</td>
</tr>
<tr>
<td>2016–2017</td>
<td>49%</td>
</tr>
<tr>
<td>2017–2020: CY 2018</td>
<td>54%</td>
</tr>
<tr>
<td>2017–2020: CY 2019</td>
<td>49%*</td>
</tr>
<tr>
<td>2017–2020: CY 2020</td>
<td>50%*</td>
</tr>
</tbody>
</table>

 CY 2020 weights specific to 2020 purchases/leases.


Overall datasets: 72,552 total survey respondents weighted to represent 376,800 rebate recipients. CY 2020 weights specific to 2020 purchases/leases. 

n-values are filtered and question-specific.
Extreme Importance of Federal Tax Credit Over Time eligible* purchases vs. leases

Percent rating tax credit Extremely Important in making it possible to acquire their plug-in vehicle

<table>
<thead>
<tr>
<th>Year</th>
<th>Purchases</th>
<th>Leases</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013–2015</td>
<td>44%</td>
<td>47%</td>
</tr>
<tr>
<td>2015–2016</td>
<td>47%</td>
<td>48%</td>
</tr>
<tr>
<td>2016–2017</td>
<td>52%</td>
<td>48%</td>
</tr>
<tr>
<td>2017–2020: CY 2018</td>
<td>57%</td>
<td>45%</td>
</tr>
<tr>
<td>2017–2020: CY 2019</td>
<td>50%*</td>
<td>46%*</td>
</tr>
<tr>
<td>2017–2020: CY 2020</td>
<td>54%*</td>
<td>42%*</td>
</tr>
</tbody>
</table>


2016–2017 Edition: filtered, question-specific n = 8,267
Extreme Importance of Federal Tax Credit: Recent Years

Percent rating tax credit Extremely Important in making it possible to acquire their plug-in vehicle


During Q1 2020, GM plug-in EVs were eligible for a reduced tax credit of $1,875.


2018 \( n = 14,225 \). 2019 \( n = 8,665 \). 2020 \( n = 1,550 \). \( n \)-values are filtered and question-specific.
Extreme Importance of Federal Tax Credit by Quarter

Percent rating tax credit Extremely Important in making it possible to acquire their plug-in vehicle

Extreme Importance of Federal Tax Credit by MSRP
2019 purchases/leases*

Percent rating tax credit Extremely Important in making it possible to acquire their plug-in 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 MSRs were unavailable for a given MY, MSRs from the previous or following MY were used. Tesla MSRs 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.
Extreme Importance of Federal Tax Credit by MSRP eligible* 2020 purchases/leases

Percent rating tax credit Extremely Important in making it possible to acquire their plug-in 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 MSRP were unavailable for a given MY, MSRP from the previous or following MY were used. Tesla MSRP 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.
Summary & Select Findings
Summary & Select Findings: Rebate Influence

Context: program design and COVID-19 shaped impacts in 2020
• $60k MSRP cap and $500 decrease in standard rebate amounts as of Dec. 2019
• COVID-19 caused an anomalous year in several respects

2020 Incentive Influence:

CVRP Rebates
• 82% found the rebate an important enabler of their EV acquisition
• 38% would not have purchased/leased without it
  – 31% for Teslas, but 47% for PHEVs, 50% for non-Tesla BEVs, 66% for Increased Rebate recipients
• Rebate influence decreased from 2019 to 2020, primarily for Tesla consumers
• Tesla rebate influence decreases as MSRP increases
• Rebate influence decreases as income increases, particularly for Tesla
• Attractive offerings (including SUVs and Tesla products) have lower Rebate Essentiality

Federal-tax-credit (FTC)
• FTC influence more steady
• 50% of FTC-eligible CVRP consumers rated FTC an “Extremely Important” enabler
  – 54% for purchases, 42% for leases (often claimed by the leasing company)
• Data confirm influence decreased for Tesla and GM as FTC phased down and out
• 2019 FTC influence decreases above $50,000 MSRP
• Relative to 2019, 2020 influence increased for MSRP $30k–40k, but decreased for MSRP<$30k
Additional Details & Resources
Funding Availability Has Been Regularly Disrupted  
(as of Sept. 2021)

Table 4: CVRP Waitlists

<table>
<thead>
<tr>
<th>Waitlist Year</th>
<th>Start Date</th>
<th>End Date</th>
<th>Length in Days</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011*</td>
<td>Jun. 20</td>
<td>Sept. 30</td>
<td>102</td>
</tr>
<tr>
<td>2013*</td>
<td>May 1</td>
<td>Jun. 30</td>
<td>60</td>
</tr>
<tr>
<td>2014</td>
<td>Mar. 28</td>
<td>Jul. 22</td>
<td>116</td>
</tr>
<tr>
<td>2016</td>
<td>Jun. 11</td>
<td>Sept. 28</td>
<td>109</td>
</tr>
<tr>
<td>2017**</td>
<td>Jun. 30</td>
<td>Nov. 20</td>
<td>143</td>
</tr>
<tr>
<td>2019**</td>
<td>Jun. 5</td>
<td>Sept. 23</td>
<td>110</td>
</tr>
<tr>
<td>2021</td>
<td>Apr. 23</td>
<td>Sept. 15</td>
<td>145</td>
</tr>
</tbody>
</table>

* Dates approximate.  
** For standard applications only; no waitlist for income-qualified increased rebates.

Table adapted from [https://cleanvehiclerebate.org/sites/default/files/attachments/Disruptions_Fact_Sheet_9_2021.pdf](https://cleanvehiclerebate.org/sites/default/files/attachments/Disruptions_Fact_Sheet_9_2021.pdf)
Rebate Essentiality Reflects Interesting Trends

As MSRP increases, rebate influence decreases

Rebate Essentiality Decreases Above $60k MSRP

2019 purchases/leases, updated

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


* 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

2019 purchases/leases, updated

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

<table>
<thead>
<tr>
<th>Model Minimum MSRP*</th>
<th>non-Tesla</th>
<th>Tesla</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than $30,000</td>
<td>51%</td>
<td></td>
</tr>
<tr>
<td>$30,000 to $39,999</td>
<td>56%</td>
<td>50%</td>
</tr>
<tr>
<td>$40,000 to $49,999</td>
<td>65%</td>
<td>51%</td>
</tr>
<tr>
<td>$50,000 to $59,999</td>
<td>55%</td>
<td></td>
</tr>
<tr>
<td>$60,000 or more</td>
<td>36%</td>
<td>34%</td>
</tr>
</tbody>
</table>


* 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 MSRP's were unavailable for a given MY, MSRP's 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.
# Consumer Survey Data
(shows rebates to individuals only)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Survey Responses (total n)**</td>
<td>66,902</td>
<td>6,616</td>
<td>1,565</td>
<td>1,808</td>
<td></td>
<td>76,891</td>
</tr>
<tr>
<td>Program Population (N)***</td>
<td>339,200</td>
<td>16,100</td>
<td>3,500</td>
<td>8,600</td>
<td></td>
<td>367,400</td>
</tr>
</tbody>
</table>

Includes fuel-cell EVs (CVRP only).

*Two fuel-cell EVs rebated by CVRP with purchase/lease dates from Dec. 2010 – Sep. 2012 are included.

** Subsequently weighted to represent the program population along the dimensions of vehicle category, model, buy vs. lease, and county.

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

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

<table>
<thead>
<tr>
<th>Program</th>
<th>Very Important</th>
<th>Moderately Important</th>
<th>Extremely Important</th>
</tr>
</thead>
<tbody>
<tr>
<td>CVRP Sep 2012 – Dec 2019</td>
<td>47%</td>
<td>90%</td>
<td>0%</td>
</tr>
<tr>
<td>MOR-EV Jun 2014 – Apr 2020</td>
<td>42%</td>
<td>89%</td>
<td>0%</td>
</tr>
<tr>
<td>CHEAPR May 2015 – Sep 2018</td>
<td>58%</td>
<td>95%</td>
<td>0%</td>
</tr>
<tr>
<td>Drive Clean NY Mar 2017 – Jul 2018</td>
<td>51%</td>
<td>93%</td>
<td>0%</td>
</tr>
</tbody>
</table>

Includes fuel-cell EVs (CVRP only). Overall datasets: 76,891 total survey respondents weighted to represent 367,400 rebate recipients.
Rebate Influence: **Essentiality**

Would **not** have purchased/leased their clean vehicle **without rebate**

- **CVRP** (Sep 2012 – Dec 2019): 52%
- **MOR-EV** (Jun 2014 – Apr 2020): 42%
- **CHEAPR** (May 2015 – Sep 2018): 58%
- **Drive Clean NY** (Mar 2017 – Jul 2018): 53%

Includes fuel-cell EVs (CVRP only). Overall datasets: 76,891 total survey respondents weighted to represent 367,400 rebate recipients.
Percent Rating the Federal Tax Credit “Extremely Important”
(“...in making it possible” to acquire plug-in EVs)

Overall datasets: 75,632 total survey respondents weighted to represent 360,800 rebate recipients.
Select Publications (reverse chronological, as of 3/2022)


- Williams, B. D. H. (2022, Jan.), Brief: PHEV Consumers Most Highly Influenced by the U.S. Federal Tax Credit. Clean Vehicle Rebate Project


Select Presentations (reverse chronological, as of 3/2022)

- CVRP 2020 Data Brief: Consumer Characteristics
- 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
- 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
Recommended citation:


brett.williams@energycenter.org

CleanVehicleRebate.org