

## Clean Vehicle Rebate Project (CVRP) SB1275: 3 Year Funding Forecasts

### Overview

In order to provide an initial 3-year funding estimate, as required by SB 1275, staff and the Center for Sustainable Energy (CSE) developed draft funding projections for the Clean Vehicle Rebate Project (CVRP) for fiscal years (FY) 2016–2017 thru FY 2018–2019. These projections are not meant to predict the future of clean-vehicle markets, but rather to provide a starting point for the discussion about program funding needs.

### Initial Projection Results

Figure 1. Initial Projected CVRP Funding Needs for Next 3 Fiscal Years

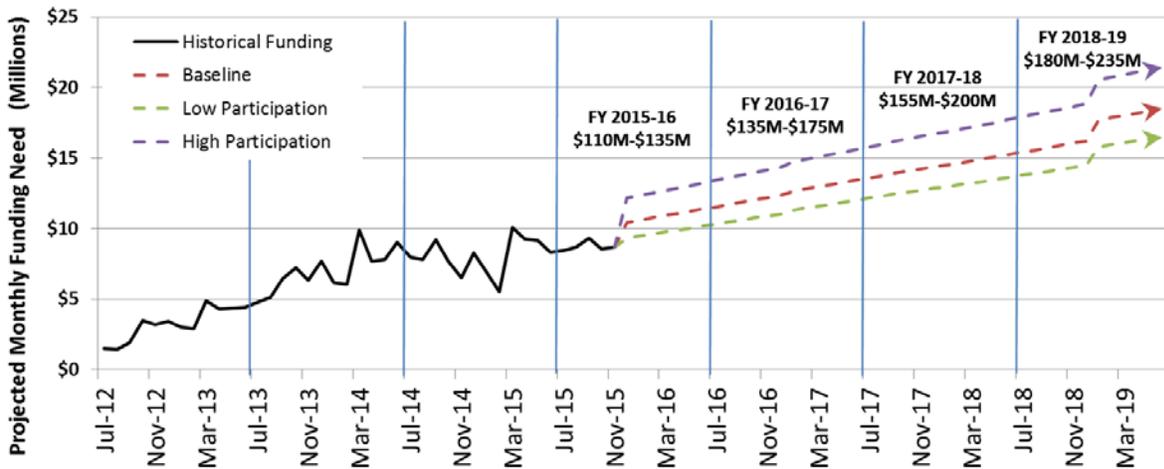


Table 1. Projected Rebate Volume and Funding Need by Fiscal Year

Fiscal Year	Estimated Number of Rebates			Estimated Funding Need		
	Baseline	Low Participation	High Participation	Baseline	Low Participation	High Participation
FY 2015-16	53,000	50,000	59,000	\$120 M	\$110 M	\$135 M
FY 2016-17	65,000	59,000	77,000	\$150 M	\$135 M	\$175 M
FY 2017-18	76,000	68,000	90,000	\$175 M	\$155 M	\$200 M
FY 2018-19	88,000	79,000	103,000	\$205 M	\$180 M	\$235 M
FYs 2016-19	229,000	207,000	270,000	\$530 M	\$470 M	\$610M

### Initial Projection Approach Summarized

After evaluating several approaches, linear extrapolations of historical data have shown to be a reliable method for short-term funding estimations. Although projecting farther into the future introduces greater uncertainties, this method’s historical accuracy, along with its simplicity, makes it a reasonable starting point for discussion of CVRP’s longer-term funding needs.

## SB1275: 3 Year Funding Forecasts cont.

1. Estimating Market Growth by Technology Type
  - PHEV and BEV forecasts were created individually by linear extrapolation of data representing vehicle sales for each technology type.
    - Vehicle registration data is used where available (March 2010 thru May 2015).
    - To characterize the last few months for which registration data is forthcoming but not yet available, CVRP rebate data is used by adjusting it for historical rates of program participation to represent overall sales (June 2015 through November 2015).
  - FCEV data is inadequate for extrapolation. The FCEV forecast was created using a possible ZEV regulation compliance scenario (2011).
  - The NEV/ZEM forecast was extrapolated from adjusted rebate data (assuming participation similar to the BEV category).
2. Estimating Funding Needs
  - Rebate funding demand was calculated by multiplying forecasted volumes for each technology type by
    - the historical percentage of participating vehicles relative to the overall market for each technology type and
    - the current rebate amount for the technology type (\$2,500 for BEVs, \$1,500 for PHEVs, \$5,000 for FCEVs, and \$900 for NEVs/ZEMs).
    - A high/low range was created based on increased and decreased participation rates (+/- 10 Program Percentage points) for each technology type

### Additional assumptions and conditions

- Incentive amounts and administrative costs remain at current levels
- Income cap and increased rebates for low-moderate income consumers were not incorporated due to insufficient data.
- Long-term forecasts are likely to be highly speculative.

### Other Approaches

Staff is seeking input on what other approaches or alternative assumptions might be valuable in future forecasts. As mentioned, several approaches have been examined, and linear extrapolations of product categories have been the most accurate method to make short-term projections, but there is no guarantee this will continue to be the case. Staff has and will continue to explore:

- Linear growth trends of more recent timeframes, rather than the entire life of the program
- Polynomial extrapolations (periodically examined, but producing unrealistic trends at this time)
- Effects of different technology type mixes (e.g. more BEVs than PHEVs)
- Incorporating Vision 2.0 methods or assumptions
- Estimating sales based on ZEV regulation compliance scenarios

## SB1275: 3 Year Funding Forecasts cont.

- Exploring how market changes might alter market growth rates (e.g., see below)
- Evaluate needs to meet SB 1275 goal of 1 million vehicles by 2023 and Governor's Executive Order B-16-2012 goal of 1.5 million vehicles by 2025

### **ZEV Market & CVRP Demand**

CVRP has provided rebates for more than 130,000 vehicles since the program's inception, however the light-duty ZEV market is still in its infancy, and these vehicles currently make up a very small percentage of the overall new light-duty vehicle market. Long-term forecasts are likely to be highly speculative. There are numerous factors affecting the uptake of ZEVs into California's LD vehicle market including:

- Upfront cost of ZEVs relative to conventional equivalents
- Fuel costs and total cost of ownership
- Other incentives such as federal incentives, high occupancy vehicle (HOV) lane access, subsidized electricity, free parking, etc.
- Product diversity and new ZEV model introductions
- ZEV awareness increased through education & outreach

The effect of these highly interrelated factors on the clean vehicle market is not currently included in the funding need projections. Staff will continue to evaluate these factors going forward and is seeking input on potential methods to incorporate market factors into future projections.