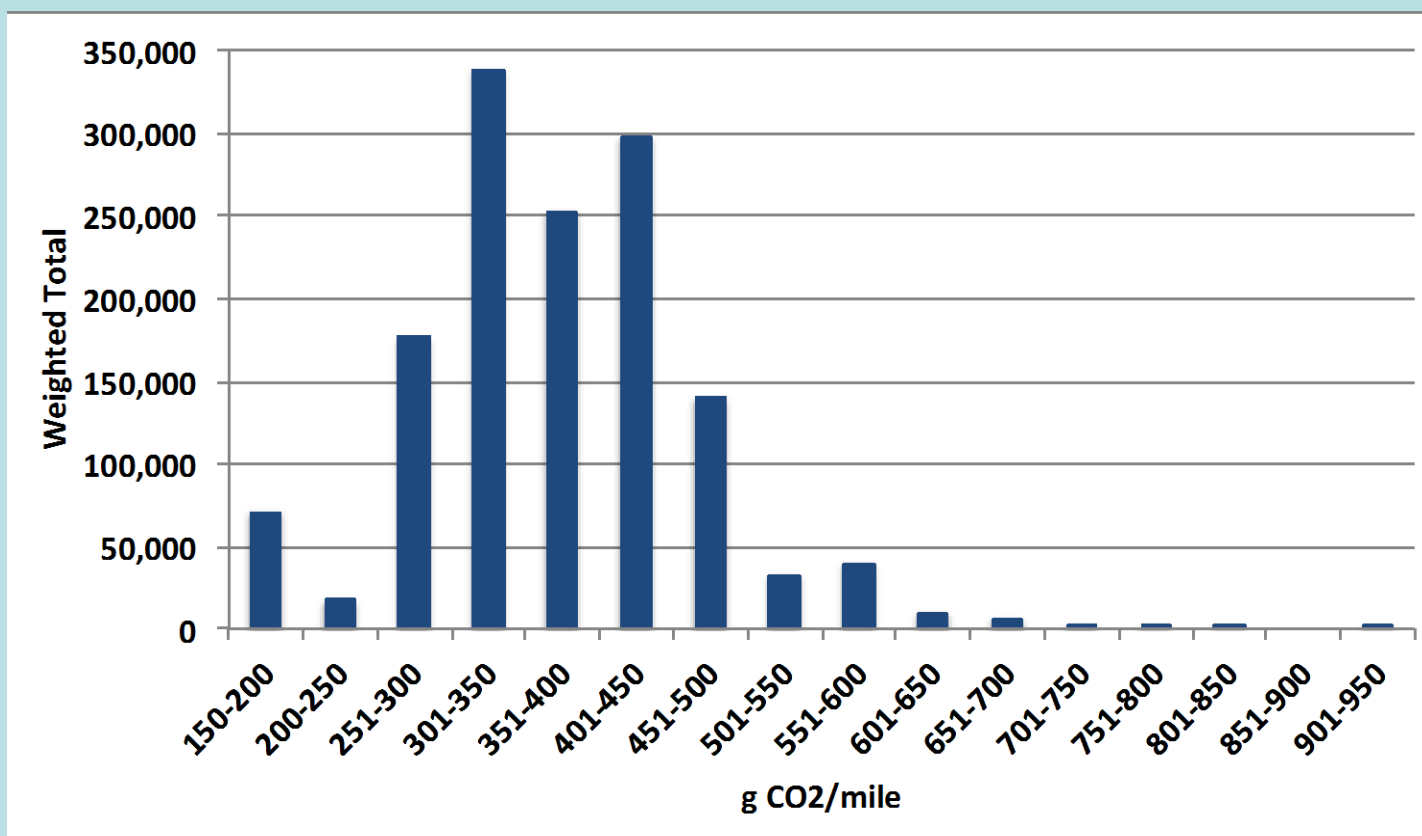


## Overview

The STEPS Scenario is used as a basis for estimating transition costs to introduce new vehicles and fuel types, while aiding in their cost competitiveness with current vehicle technologies

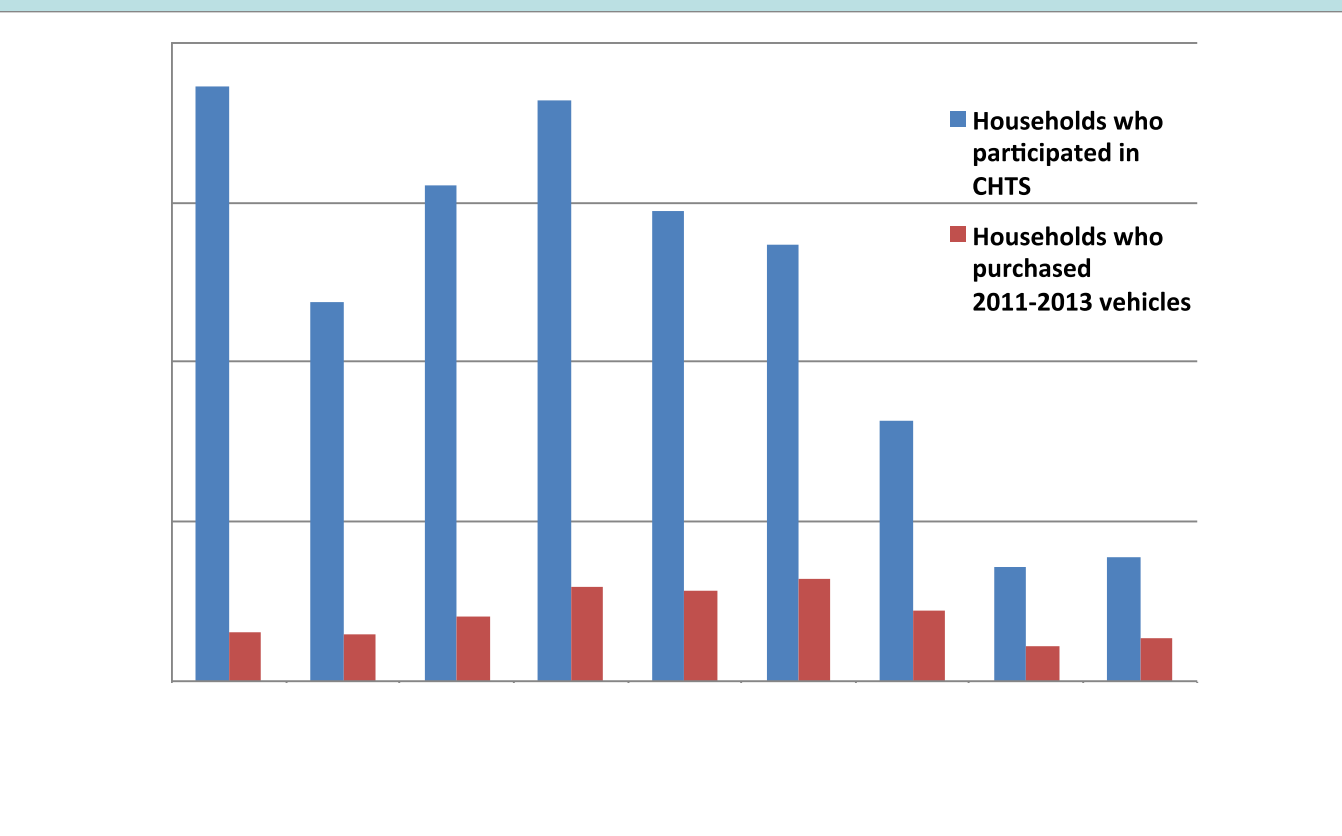
## 2010 - 2012 California Household Travel Survey Data Set

### CO<sub>2</sub> characteristics and weighted distribution for new cars, 2011-2013

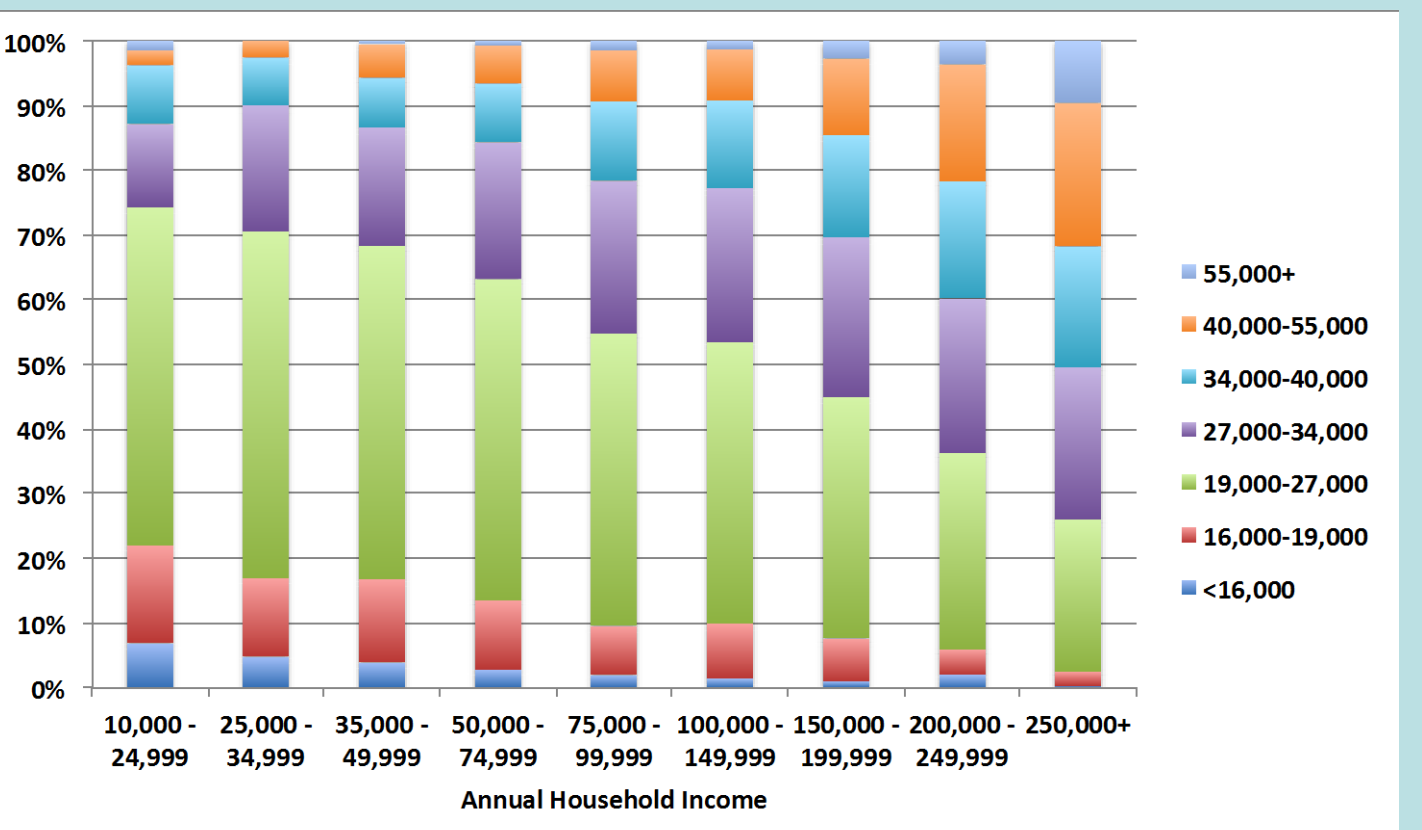


\* Mean CO<sub>2</sub> is 375 g/mi  
\* Minimum is Prius with 178 g/mi  
\* 90% of sales are below 500 g/mi

### Population representation of new car buyers as compared to overall population

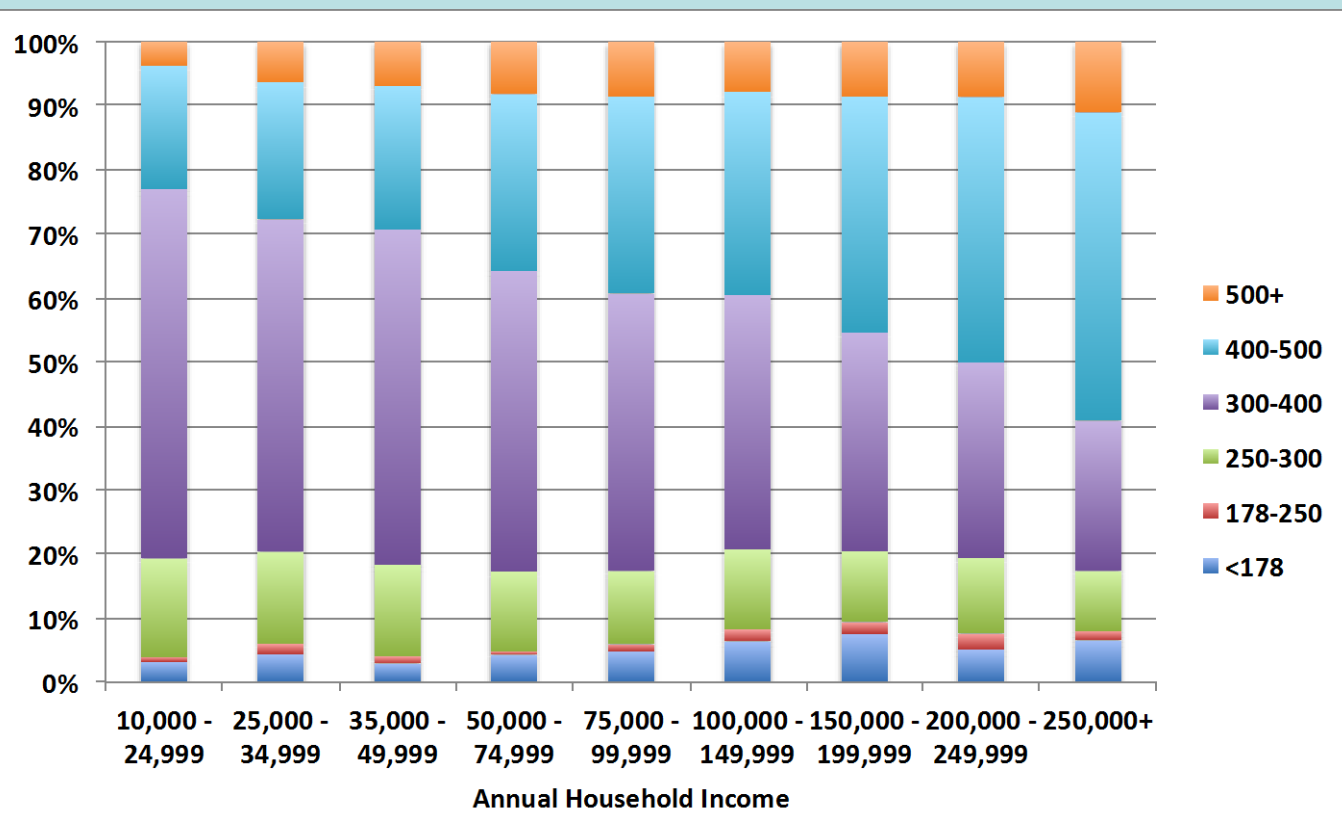


### Distribution of new vehicle adjusted MSRP per annual household income



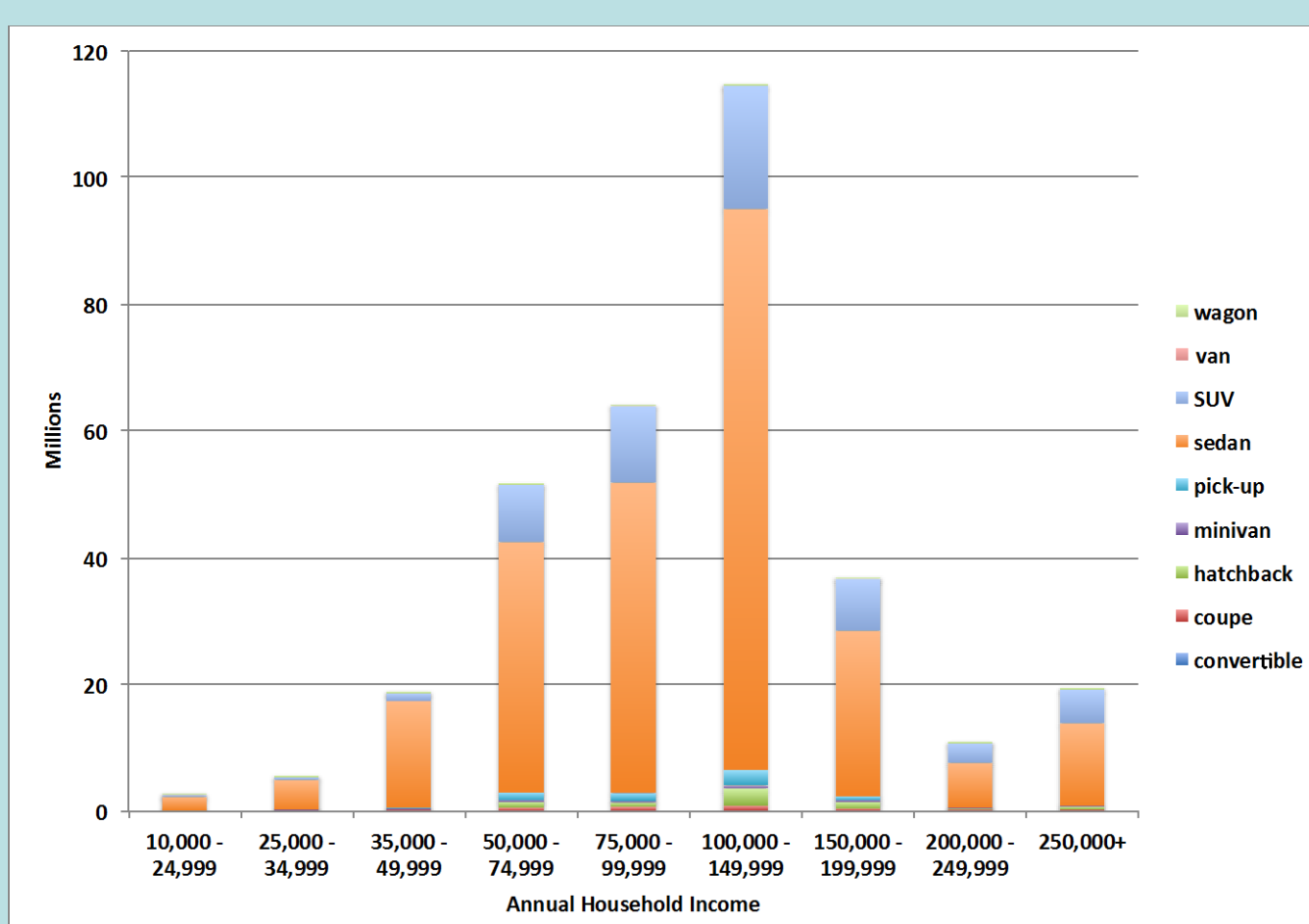
\* As income increases, households purchase more expensive vehicles

### Distribution of vehicle GHG emission levels (CO<sub>2</sub> eq grams/mile) per annual household income

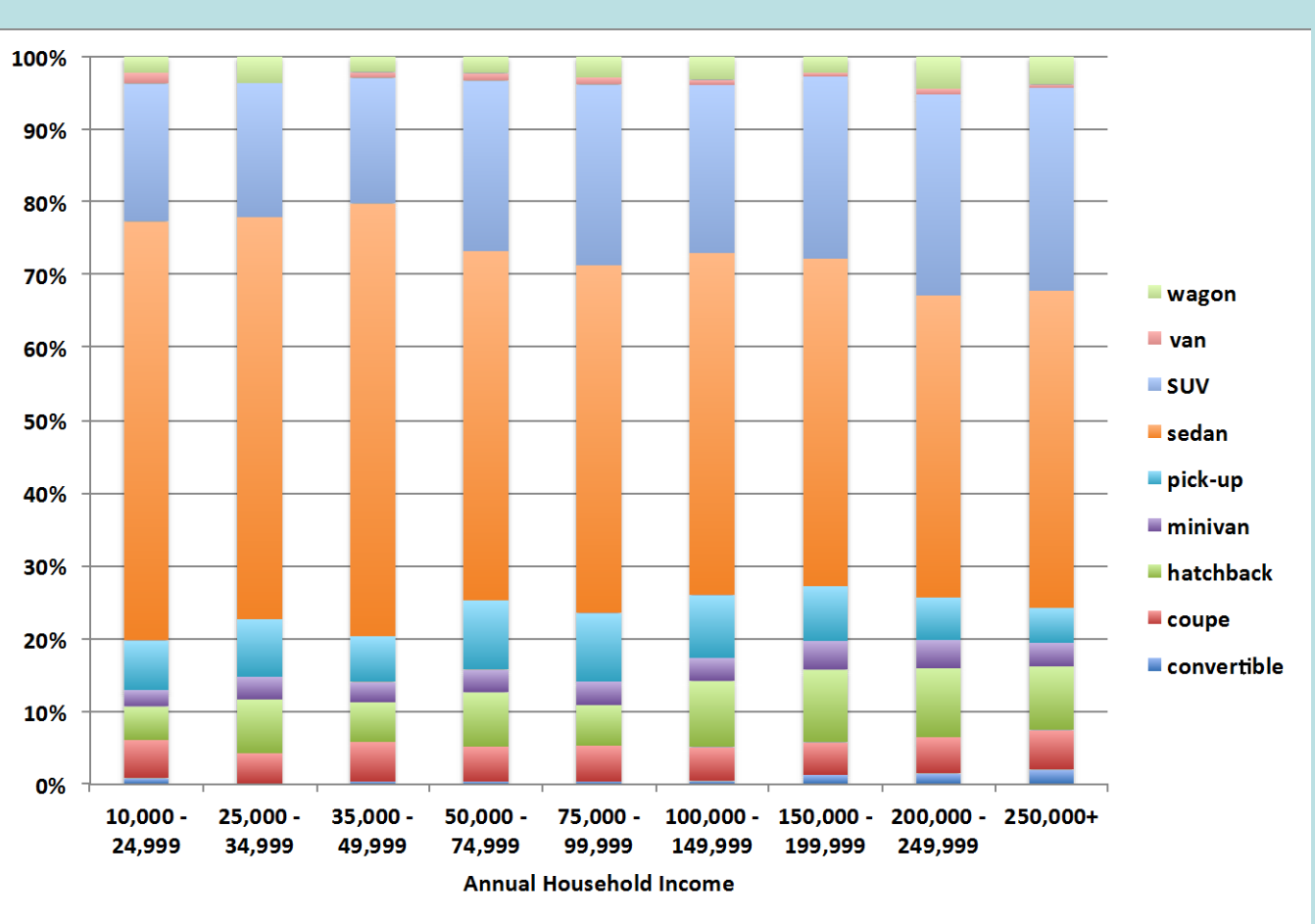


\* Shift from vehicles in the 300-400 g/mi to 400-500 g/mi stage as income increases

### Distribution of sales, broken out by new car body types by household income group (left) and as percentages for each group (right)



\* Households with \$100k - \$150k income purchase the majority of new vehicles



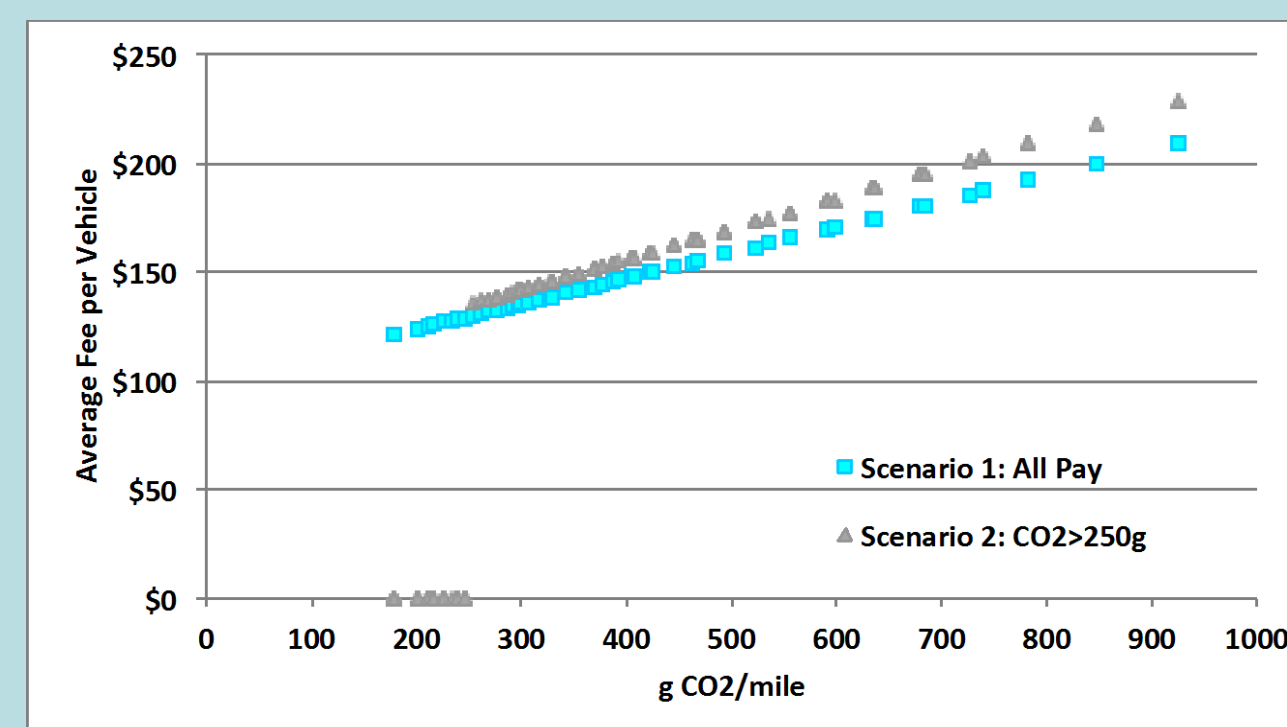
\* Distribution of sales remains stable across income categories

\* Slight trend toward increased SUV sales and decreased sedan sales as income grows

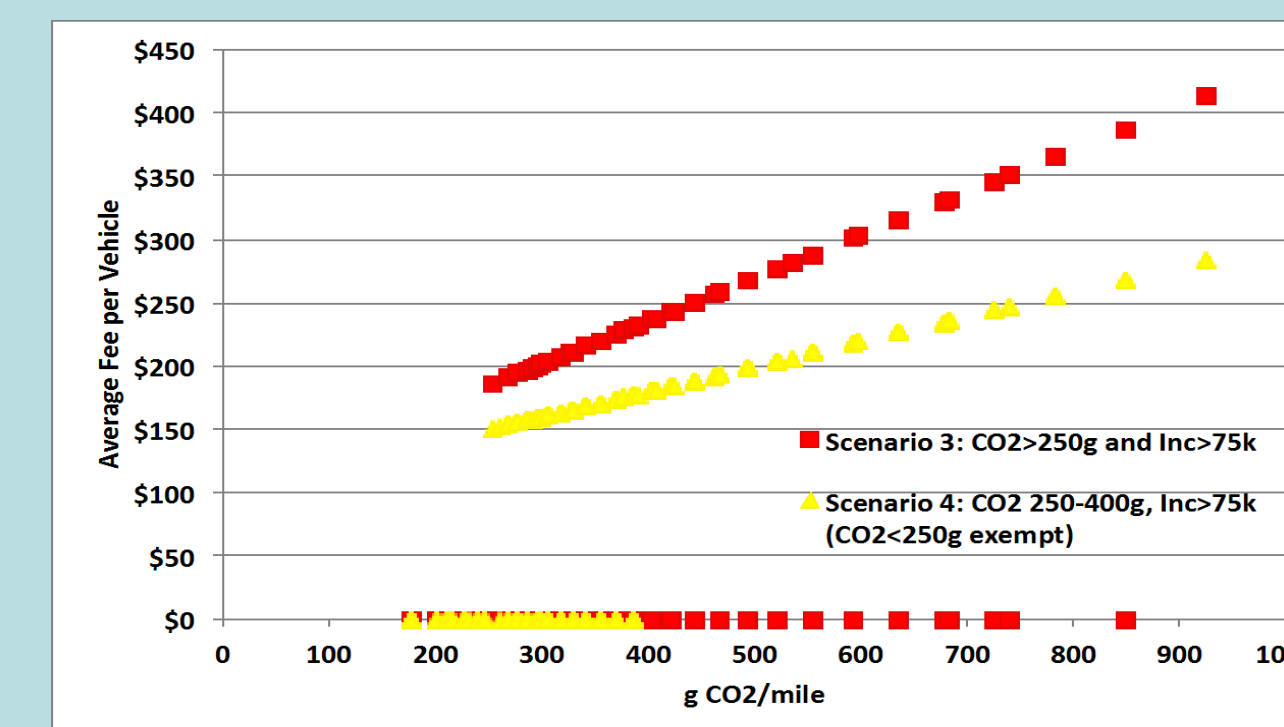
## STEPS Scenarios:

### Key Findings

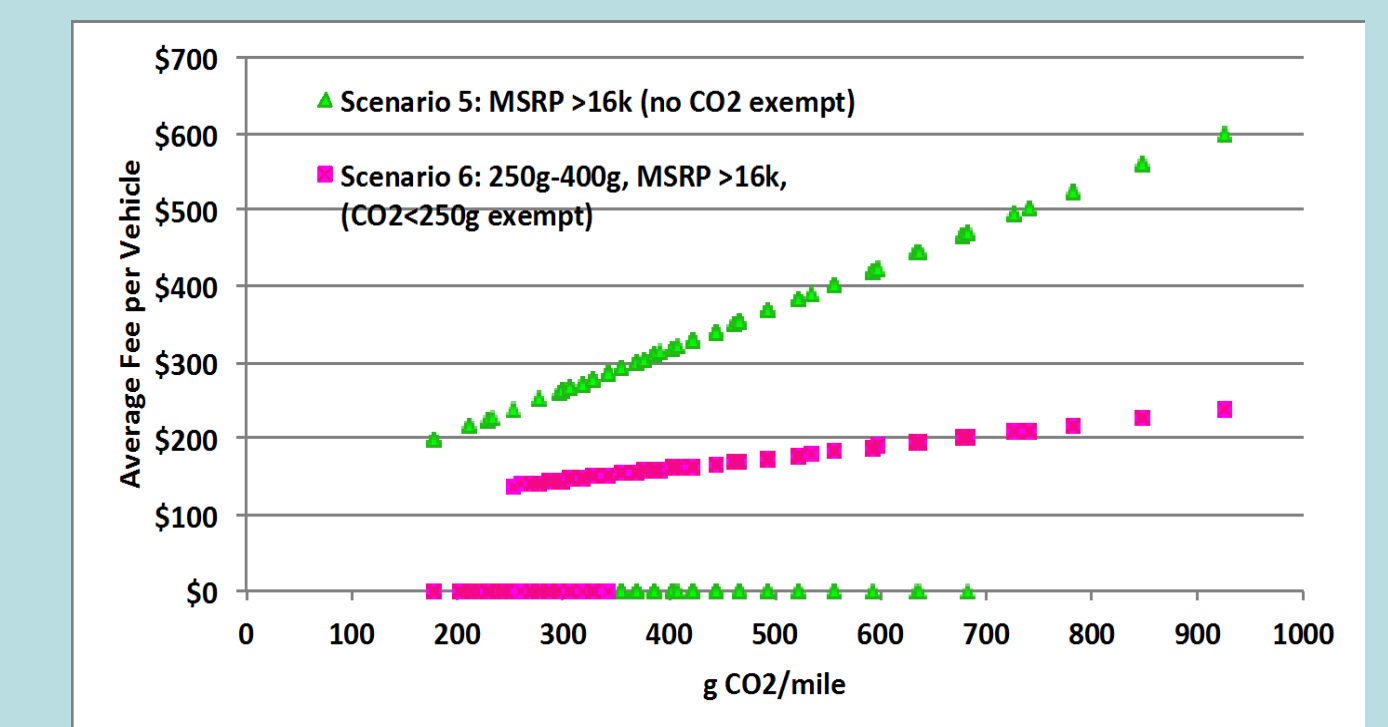
- Only a modest fee is required to fund the CVRP, up to \$200 million
- An average fee of \$150 per car can be sufficient to fund the rebates
- Fee structures that exempt low-emitting cars, low-income households, or both result in higher fees
- Fee levels will need to evolve to generate increased revenue over time
- It is assumed that fees below \$300 will not impact purchasing decisions



**Scenarios 1 & 2:**  
All incomes pay a fee  
S1 Fee Begins: 177 g/mi  
S2 Fee Begins: 250 g/mi



**Scenarios 3 & 4:**  
Incomes of \$75,000 play a role  
S3: Income > \$75k pay a fee  
S4: Income > \$75k and emit > 400 g/mi pay a fee



**Scenarios 5 & 6:**  
MSRP of \$16,000 play a role  
S5: MSRP > \$16k pay a fee  
S6: MSRP > \$16k and emit > 400 g/mi pay a fee

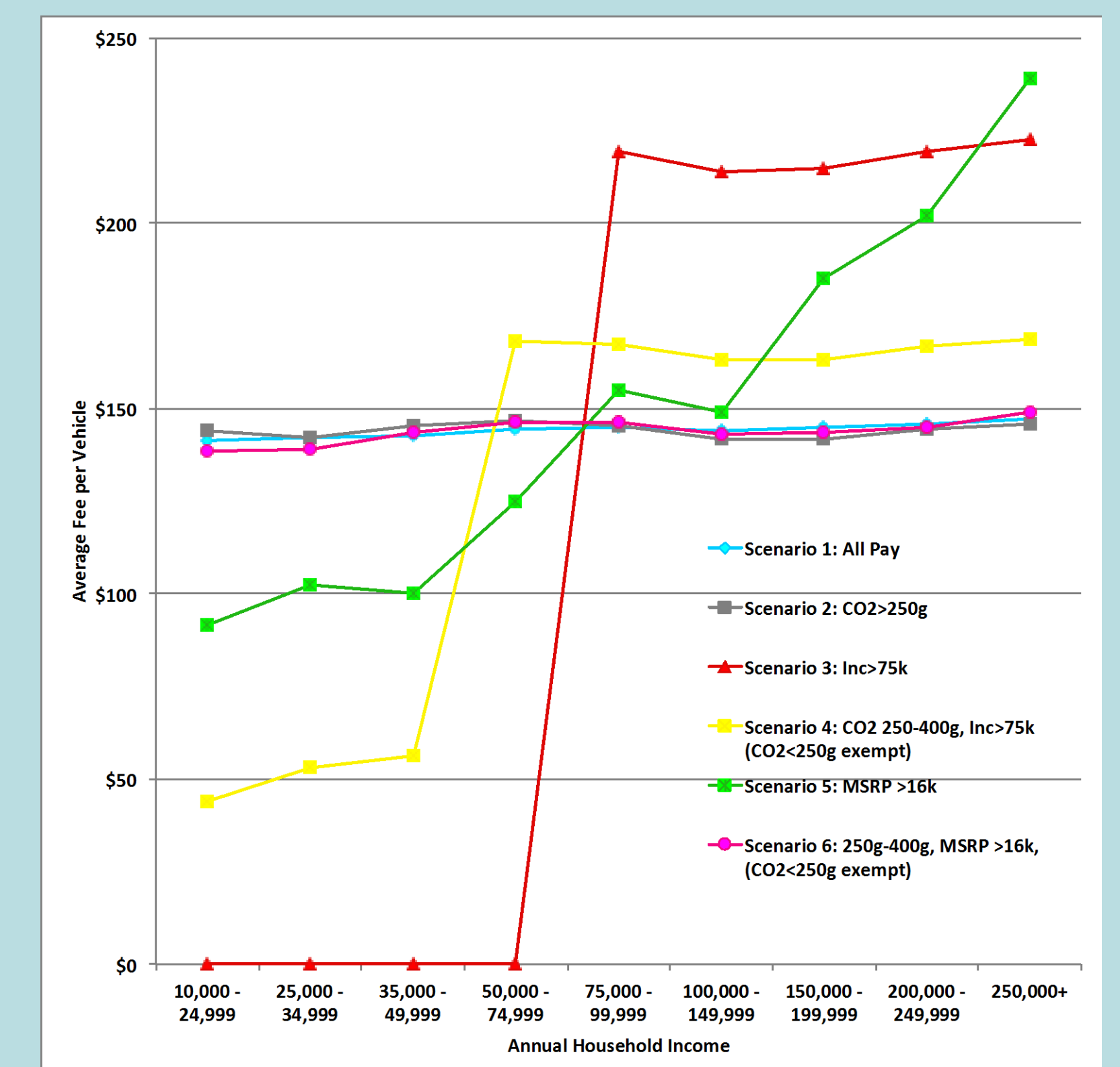
### CVRP Funding Goals

- STEPS Scenarios require generating \$200 million in revenue
- Assumption of a minimum fee of \$100 assessed for qualifying vehicles
- Toyota Prius hybrid is the lowest emitter, at 177 g CO<sub>2</sub>/mile

### STEPS Scenarios Summary

	Average vehicle fee	Top vehicle fee	Strengths	Weaknesses
1. All vehicles and incomes pay	\$144	\$210	Lowest top fee	Low income pays same as high income
2. Exempt vehicles below 250 g/mile	\$144	\$230	Only higher GHG vehicles pay	Top fee higher than if all car CO <sub>2</sub> levels pay; though not many cars are below 250 g/km so not much different
3. Exempt households with incomes below \$75,000	\$152	\$413	Only wealthier households pay	Top fee higher than if all HH's pay; some lower income HH's do buy expensive vehicles
4. Exempt households below \$75k, only up to 400 g/mile vehicles	\$150	\$283	Lower income HH's pay for high CO <sub>2</sub> vehicles, but have many choices with no fee	Higher top fee given fewer vehicles included
5. MSRP-based approach, cars pay only if over \$16,000	\$154	\$600	Those buying low-price cars don't pay; presumably these are mostly lower income households	Could create an incentive to supply low cost, high GHG cars
6. MSRP of below \$16k and below 400 g/km do not pay; vehicles above either pay	\$145	\$237	Ensures that high CO <sub>2</sub> vehicles pay, even if low price	Some low-income HH's may need large (and thus high CO <sub>2</sub> ) vehicles e.g. for job-related travel.

### Average fee per vehicle per annual household income



## What's Next?

The STEPS Scenarios will continue with:

- Projecting the California market out to 2025, accounting for 15% ZEV market shares
- Estimating required funding for the next 10 years
- Evaluating fee structures to generate revenue that can fund the program for the next 10 years
- Analyzing market effects:
  - How vehicle purchases will shift towards purchasing ZEVs
  - How the rebate fund will increase as ZEV sales increase
  - How to meet the ZEV sales targets