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A California Feebate Program can Support Transition to Zero Emission Vehicles at No Cost to Taxpayers

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Issue

The State of California has developed a range of programs to accelerate the adoption of zero-emission vehicles (ZEV). California's ZEV mandate will require 15% of vehicles sold in the state to be ZEV or transitional ZEV (TZEV) by 2025¹. To encourage purchases of these vehicles, California established the Clean Vehicle Rebate Project (CVRP), which provides consumer rebates of \$5,000 for fuel cell vehicles, \$2,500 for battery electric vehicles, and \$1,500 for plug-in hybrid electric vehicles². The federal government also provides a \$7,500 tax credit to purchasers of qualifying electric vehicles. As ZEV sales increase, the amount of funding needed to provide rebates would need to increase as well at a cost to taxpayers under the current incentive structure. For example, selling one million battery electric vehicles in California will result in a cost of \$10 billion to taxpayers (i.e., \$10,000 in combined federal and state incentives multiplied by one million).

Markets and regulations are also getting out of alignment. Vehicle fuel economy and greenhouse gases (GHG) standards are becoming more stringent as oil prices are staying low. If gasoline prices stay low, as seems likely (thanks in part to tightening vehicle standards in US, Europe, and elsewhere), then consumers will have little incentive to buy a more expensive, fuel-efficient car. As vehicle fuel and GHG standards get become even more stringent, the misalignment will worsen.

Research Findings

The Institute of Transportation Studies at UC Davis analyzed historic vehicle sales in California to develop a revenue-neutral feebate program at no cost to taxpayers (Table 1). This is accomplished by redistributing the collected fees as rebates: for every dollar that is collected as a fee, a dollar is returned as a rebate (less a small administrative charge).

	Amount	Cutoff		Amount	Cutoff
	Fees assessed to "gas guzzler"	\$2,500		Cars: <26 mpg Trucks: <19 mpg (<5th Percentile)	Rebates returned to electric vehicle owners
	\$1,500	Cars: 26-31.5 mpg Trucks: 19-23 mpg (10th Percentile)		\$1,500	Cars: 47-71 mpg Trucks: 34-36.5 mpg (90th Percentile)
	\$500	Cars: 31.5-33 mpg Trucks: 23-24.5 mpg (15th Percentile)		\$2,500	Cars: > 71 mpg Trucks: > 36.5 mpg 95th Percentile

Table 1. Sample Feebate Structure

KEY TAKEAWAY

A feebate policy charges a fee to buyers of "gas guzzlers" and provides rebates to buyers of fuel efficient and electric vehicles. Feebates are a policy mechanism that can increase electric vehicles sales while still remaining to:

- (1) reduce taxpayer burden,
- (2) preserve the integrity of federal fuel efficiency standards (by aligning market price signals);and
- (3) improving social equity by reducing the cost of vehicles for low income buyers.

Findings (continued)

The proposed feebate design has buyers of cars rated at less than 25.9 mpg and of light trucks (SUVs, minivans, pickups, crossovers) rated less than 19.1 mpg paying \$2,500. On the other end, buyers of cars with greater than 71 mpg and light trucks with greater than 36.4 mpg, would get rebates of \$2,500. This feebate structure would yield a total of \$500 million in rebates in 2015 for the top 15% most fuel efficient vehicles, paid for by the worst 15% gas guzzlers. The feebate only applies to 30% of car purchases, half of which receive a rebate while the other half pay a fee. The remaining 70% of the market is unaffected by the feebate program.

In order not to penalize sellers and buyers of light trucks (SUVs, etc), the feebate is separated into two categories: cars and light trucks. The dual feebate structure will prevent any funds from trucks going towards light-duty cars and vice versa. This provides a level playing field for all automakers.

Benefits of a Feebate Policy

Correct market signals: Low gasoline prices can undo gains in vehicle fuel economy because consumers will care less about purchasing an efficient vehicle. However, a feebate will simultaneously provide a disincentive for buying lower fuel efficiency vehicles by making them more expensive and at the same time give buyers an incentive to purchase higher fuel efficiency vehicles by making them cheaper.

Low-Income Consumers Benefit: If a low-income consumer decides to switch from a 30 mpg sedan to a 45 mpg hybrid, he/she would receive a not only a \$500 rebate but also \$5,000 in fuel savings over the lifetime of the vehicle. In sum, any switch to a higher mpg vehicle will often yield savings that outweigh the fee.

Revenue neutral and sustainable: The feebate is revenue neutral (Figure 1). Money that is collected from fees is returned in the form of rebates. The rates would be adjusted each year to recognize changes in fuel economy of vehicles and shifts in demand that might result from the feebate and other factors (such as changing gasoline prices). The feebate requires no funding from taxpayers or other programs. The feebate policy would replace the CVRP and provide certainty for electric vehicle incentives until these vehicles become a large share of the market.

Conclusion

Feebates are necessary and inevitable—to continue providing incentives for buying electric vehicles and increasing vehicle efficiency at the same time. The urgency of feebates will grow as oil prices stagnate. And as government incentive payouts for electric and fuel cell vehicles increase, feebates will become a more compelling incentive for encouraging ZEV sales without burdening taxpayers.

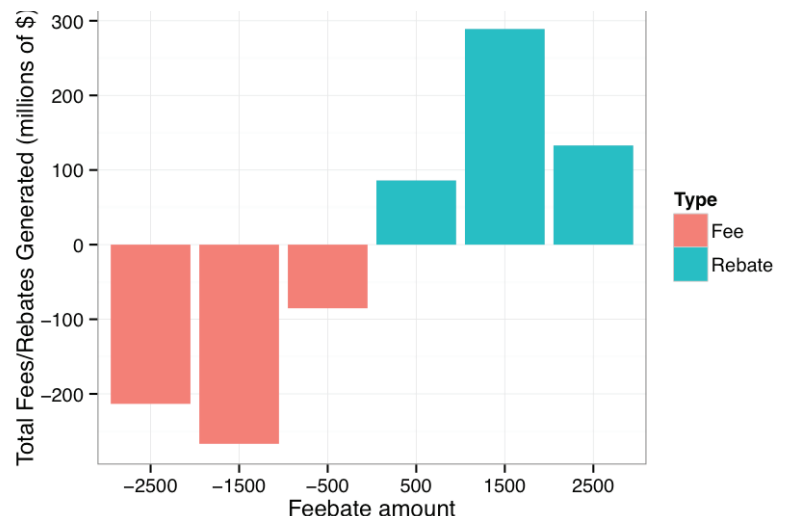


Figure 1: The proposed feebate policy is entirely revenue-neutral with a total of \$500 million annually being raised in fees and paid out in rebates. Most of the revenue is generated from the \$1,500 and \$2,000 portion of the feebate.

ⁱCalifornia Air Resources Board (ARB). July 10, 2014. Zero-emission vehicle standards for 2018 and subsequent model year passenger cars, light-duty trucks, and medium-duty vehicles. arb.ca.gov/msprog/zevprog/zevregs/1962.2_clean.pdf

ⁱⁱCalifornia Clean Vehicle Rebate Program (California CVRP). 2015. EV consumer survey dashboard. energycenter.org/clean-vehicle-rebate-project/survey-dashboard.

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