



No Californian Left Behind Part II: Capturing climate and cost saving co-benefits through vehicle retirement and replacement

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Next Generation

Executive Summary

Our recent publication, *No Californian Left Behind: Clean and Affordable Transportation for All*, contended that California's vehicle retirement and replacement program should be revamped to provide greater climate and air quality benefits for low-income Californians. Specifically, we argued that the program, known as the Enhanced Fleet Modernization Program (EFMP), should include higher efficiency requirements for all replacement vehicles – enabling the EFMP to capture the co-benefits of greenhouse gas reduction and fuel savings for program participants. While squarely locating the EFMP in the overall California climate policy debate, this recommendation also prompted two important questions from policymakers and media alike: **are efficient vehicles affordable for low-income Californians, and are these vehicles readily available on California's auto market?**

We address both questions in this follow-on report. Our conclusion: robust minimum efficiency standards are key to maximizing the benefits of EFMP vehicle replacement, and more than enough affordable vehicles are available on California's auto market to make such standards reasonable.

In our analysis, "affordable" is defined as "making financial sense right off the lot." For many drivers, the question of affordability boils down to the initial price, not the potential savings over the life of the vehicle. Accordingly, we use a "break-even" cost to evaluate whether a driver can leave the lot with a new vehicle and immediately save on her or his transportation costs through reduced fuel, repair, and maintenance costs. To ensure successful vehicle replacement in low-income communities, EFMP must be able to put drivers "in the black" from day one and, as illustrated in Figure ES-1, where possible, help them build equity in their new vehicles.

Since we released our initial report, the California Air Resources Board (ARB) staff has proposed amendments to the EFMP, which are outlined in a May 6th staff report. These make substantial progress toward increasing efficiency requirements for replacement vehicles, but do not extend those increased requirements to the lowest-income households – those earning 225 percent or less of the federal poverty level.¹ Since replacement vehicles must be model year 2006 or later, most vehicles purchased with an EFMP voucher are almost certain to be cleaner and safer than retired cars. However, the relatively lax vehicle efficiency requirements mean that there is no guarantee that replacement vehicles will reduce household transportation costs or greenhouse gas emissions for low-income households.

We strongly recommend a modest increase in minimum vehicle efficiency requirements for replacement purchases even for the lowest-income households in order to maximize EFMP's cost-saving and greenhouse gas reduction benefits. Accordingly, ARB and the state should consider the following:

- **To save low-income drivers from high gas bills, and to lower GHG emissions across the state, California's retirement and replacement program should require increased baseline efficiency levels for all replacement cars, light trucks, and SUVs.** While EFMP has traditionally focused solely on improving air quality, the program has the potential to help meet two other core state goals: reducing emissions and providing new economic opportunities for California families. ARB's plan to incorporate a 35 MPG efficiency floor for moderate-and-above income households is a major step in the right direction. But in order for EFMP to actually reduce household transportation costs, the program must include increased baseline efficiency requirements for all replacement vehicles across different vehicle classes and income brackets. We recommend an efficiency floor of at least 27 MPG for cars and 23 MPG for trucks and SUVs.

- **Financing is also critical: most low-income households cannot afford efficient replacement vehicles without access to low-cost auto loans or lease programs.** We recommend requiring low-income auto loans and/or affordable leasing programs for low-income regional pilot projects under the EFMP. Current state-run low-income financing programs, such as the CalCAP Truck Loan Assistance Program, could provide the foundation for a similar program targeting cars and light trucks / SUVs.
- **Efficient and affordable replacement vehicles are available in key California markets.** The California regions most in need of a cleaner vehicle fleet, the San Joaquin Valley and South Coast, already have sizeable used and new vehicle markets of high-efficiency cars; these are available at a comparable price to the post-model year 2006 vehicles already required under California's program.

Monthly Auto Driving Costs Compared: From High Polluters to EVs

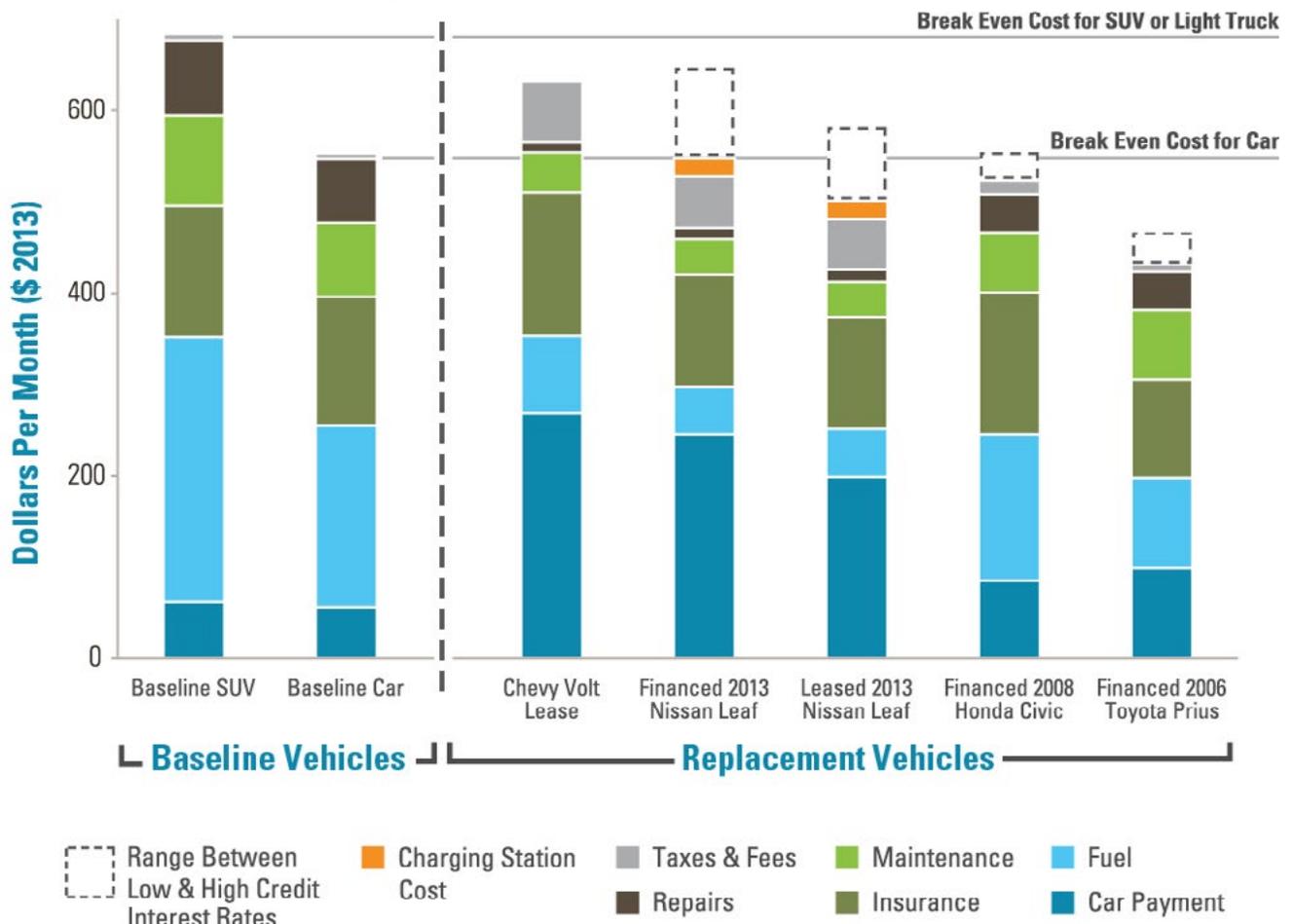


Figure ES-1: Comparing the costs of high-polluting automobiles and various replacement options.

No Californian Left Behind Part II

Introduction: Transportation Equity in California

Larry H. is an agricultural worker in Huron, located in California's San Joaquin Valley. He drives a 15 mile-per-gallon 1995 Ford Explorer 115 miles every day to commute to work, spends between four and five hundred dollars per month on gas, and recently had to pay an additional \$500 so his vehicle could pass California's required smog check.²

Larry's Ford Explorer is just one of an estimated 2 to 3.5 million high-polluting light duty vehicles on California's roads. These cars and light trucks generate over half of the light-duty vehicle sector's smog-forming pollutants and are some of the least safe vehicles on the road today.³

They also don't come cheap: their drivers will spend over six billion dollars fueling these vehicles in 2014 alone (not to mention what they'll spend on repair and maintenance). For low-income households, inefficient vehicles like Larry's lead to bills that can easily consume twenty percent of monthly budgets.⁴⁵

In a recent report, *No Californian Left Behind*, we argued that existing clean-transportation incentives and programs in California are largely out of reach for many low-income households and drivers. These households typically face long commutes, live in dispersed rural areas of the state without easy access to public transit, and have little cash on-hand to afford efficient replacement vehicles. For them, electric vehicles and public transportation – the major focuses of Californian clean transport policy to date – are not always viable options.

California's Enhanced Fleet Modernization Program and SB 459

Old and high-emitting vehicles are damaging Californian's health, safety, and pocketbooks. Lifting this burden, especially for low-income and rural households and communities, is a crucial part of moving California toward a sustainable and equitable transportation future.

California policymakers introduced the EFMP in 2010 to accelerate the turnover of the lowest end of the light duty vehicle fleet, cutting out smog-forming pollutants from the transportation sector in the process. Existing programs have largely focused on retiring on-road vehicles by giving consumers cash incentives of \$1000–\$1500, depending on income level, to retire their high-polluting vehicles. The EFMP has retired over 70,000 vehicles to date, over half of which belonged to low-income drivers. However, many of these vehicles may have been destined for retirement even without the incentive, or may have been "junkers" that were seldom driven.⁶

EFMP has attempted to spur actual replacement of high-emitting vehicles in the past by offering an incentive of \$4,000 to drivers who both retire and replace their vehicles, but with only 22 vouchers issued as of March 2014, this initiative has encountered substantial barriers to success.⁷ Enter SB 459, which directs ARB to re-design EFMP to focus on and dramatically improve the replacement aspect of the program.⁸ It's important that the state succeeds in re-launching EFMP and in expanding its overall climate benefits by including an efficiency baseline for replacement vehicles. This would help the program qualify for cap and trade auction revenues and, more broadly, serve as a replicable model for other states looking for ways to improve the overall efficiency of their light duty vehicle fleets.

For more information on SB 459, EFMP, and California's transportation future, see our recent report on the topic at: <http://thenextgeneration.org/blog/post/no-californian-left-behind>.

Last year’s Senate Bill 459 (Pavley) aimed to change the status quo, directing the California Air Resources Board to rewrite the guidelines of the state’s Enhanced Fleet Modernization Program (see box on Page 4 for background). ARB staff’s proposed revisions to the EFMP, released in early May of 2014, represent a major step toward realizing the goals of SB 459, including provisions to increase the efficiency of replacement vehicles and increase program participation among low-income households.

However, ARB’s proposed regulations exempt low-income households like Larry’s from the fuel efficiency standards now in place for other California drivers accessing the EFMP. These households can receive state incentives to retire older vehicles and replace them with vehicles that have efficiencies as low as 20 MPG – meaning a driver participating in the EFMP could easily spend more on transportation, not less, after using a voucher to buy a new vehicle.

We recommend the ARB update its draft regulations to address this issue and provide strong climate and efficiency benefits to even the lowest-income households in the state. Our research indicates that raising efficiency standards for these drivers will not add a significant burden for those looking for replacement vehicles, and will have the very positive benefit of lowering fuel bills for those most in need. By taking additional steps to ensure that low-income drivers transition into the most efficient vehicles possible and by ensuring that low-cost financing is available to help them make that switch, the EFMP has the potential to ensure that low-income Californians become an integral part of the state’s transportation future: a future that provides consumers with more efficient vehicle, fuel, and transit choices.

Vehicle ownership costs in California

High-polluting vehicles are expensive to drive and maintain. They are also often unsafe: drivers of older cars are significantly more likely to sustain severe injury in an accident due to critical safety features that are only present in newer cars.⁹ As shown in Figure 1, these vehicles (modeled here after vehicles observed at Valley Clean Air Now Tune In & Tune Up events in the San Joaquin Valley) can cost between \$550 and \$730 a month to own and maintain¹⁰ – that’s 15–20 percent of the entire budget for a low-income family of three. And the economic picture gets even worse when families own multiple high-polluting vehicles.¹¹

Driving costs consume 15–20% of low-income household budgets

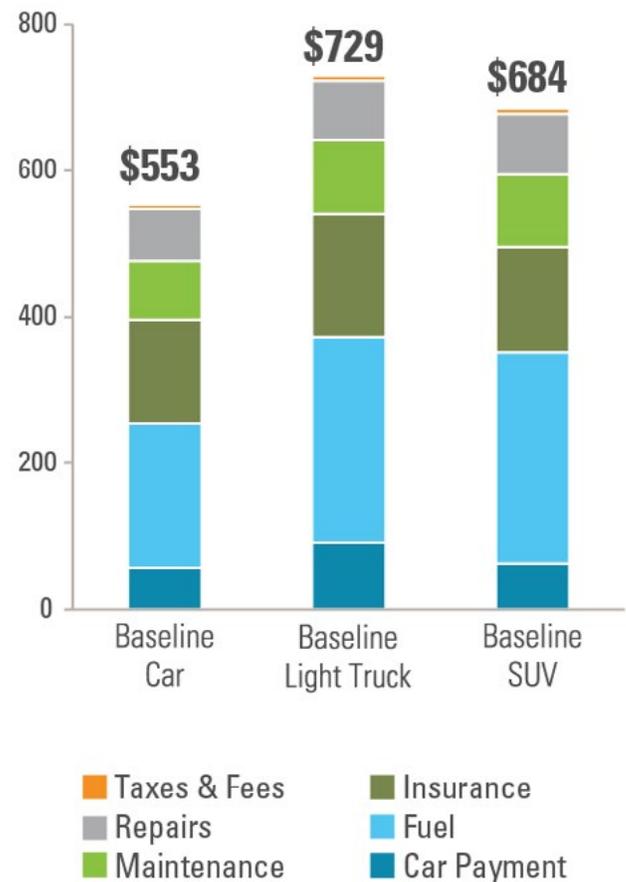


Figure 1: Estimated monthly costs associated with high-polluting vehicles.¹²

EFMP and Enhanced Efficiency

In this analysis, we focus specifically on the vehicle retirement and replacement scenarios that allow drivers to get into a new vehicle and save money from the moment they drive off of the lot. We believe the revamped EFMP should reduce household transportation expenditures in addition to providing safety and clean air benefits to program participants; given the cost savings possible from upgrades in vehicle efficiency, there is every reason to actively pursue this important economic goal.

For most drivers, buying a car comes down to the initial price, not the potential savings over the life of the vehicle. Accordingly, we use a “break-even” cost to evaluate whether or not a driver can leave the lot with a new vehicle and immediately save on her or his transportation costs.

We analyzed different monthly cost scenarios based on currently available new and used vehicles in the state and compared them to the high-polluting vehicles discussed above. All of these scenarios use EFMP incentives (and, where applicable, incentives from California's Clean Vehicle Rebate Project [CVRP], which provides rebates to consumers who purchase electric vehicles) to reduce the cost of the new vehicle and, where needed, to cover down payments.¹³

We then used the above methodology to consider three different kinds of replacement vehicles: cars, used electric vehicles, and light trucks / SUVs.

Replacing Cars

The Current Market: Used Gas-Powered Vehicles and New Electric Vehicles

Under the currently proposed revisions to the EFMP, low-income households can receive state incentives to retire older vehicles and replace these with vehicles that have efficiencies as low as 20 MPG – the same level federal CAFE standards required new cars to meet on average in 1980.¹⁴ Largely because of these low efficiency requirements, we found that many replacement vehicles that are technically allowable under the EFMP may not produce a cash-positive scenario for new buyers (see Figure 2). In contrast, financed used vehicles like Toyota Priuses and Honda Civics immediately save new buyers money thanks to their higher fuel economy. Furthermore, used high efficiency gas powered vehicles and hybrids are comparable in cost to their less efficient counterparts. For example, according to Kelly Blue Book, a 2006 Toyota Camry with 80,000 miles in very good condition is worth about \$8,900 on the used car market while a 20% more efficient 2006 Honda Civic is worth \$7800 and a similar-condition, 46-MPG 2006 Toyota Prius is worth \$9600.¹⁵

Here are some specific results coming out of our research into the used vehicle market:

- **Used hybrids can produce deep cost savings.** Replacement hybrids like the Toyota Prius produce the deepest net monthly savings of all replacement scenarios we analyzed – a result of their relative affordability (in the \$10,000 range – comparable with the cost of the post-2006 replacement cars already required under the EFMP) and excellent fuel-economy.
- **Some new EVs currently on the market can save low-income households money.** Some new electric vehicles like the Chevrolet Spark, Nissan Leaf, and Mitsubishi i are cost-competitive with high polluting vehicles. But EVs can present other challenges for low-income drivers, especially those with low credit scores and/or minimal cash on hand. Some specific barriers include the fact that low-income households may not qualify for low-cost EV leases or financing; that leased EVs leave low-income drivers with no vehicle to sell or trade at the end of the lease term; and that the state's main rebates for EV purchases, under the CVRP program, are available to consumer only after the vehicle has already been purchased, requiring drivers to have enough cash on hand for that initial purchase. SB 1275 (De Leon) would address these barriers by providing new financing options, allowing low- and moderate-income drivers to finance or lease new or used EVs. To do this, the bill would require ARB to consider allowing low-income households to pre-qualify for CVRP rebates, enabling those households to use rebates at time of purchase.¹⁶

Replacement vehicles require increased efficiency baselines in order to save low-income households money

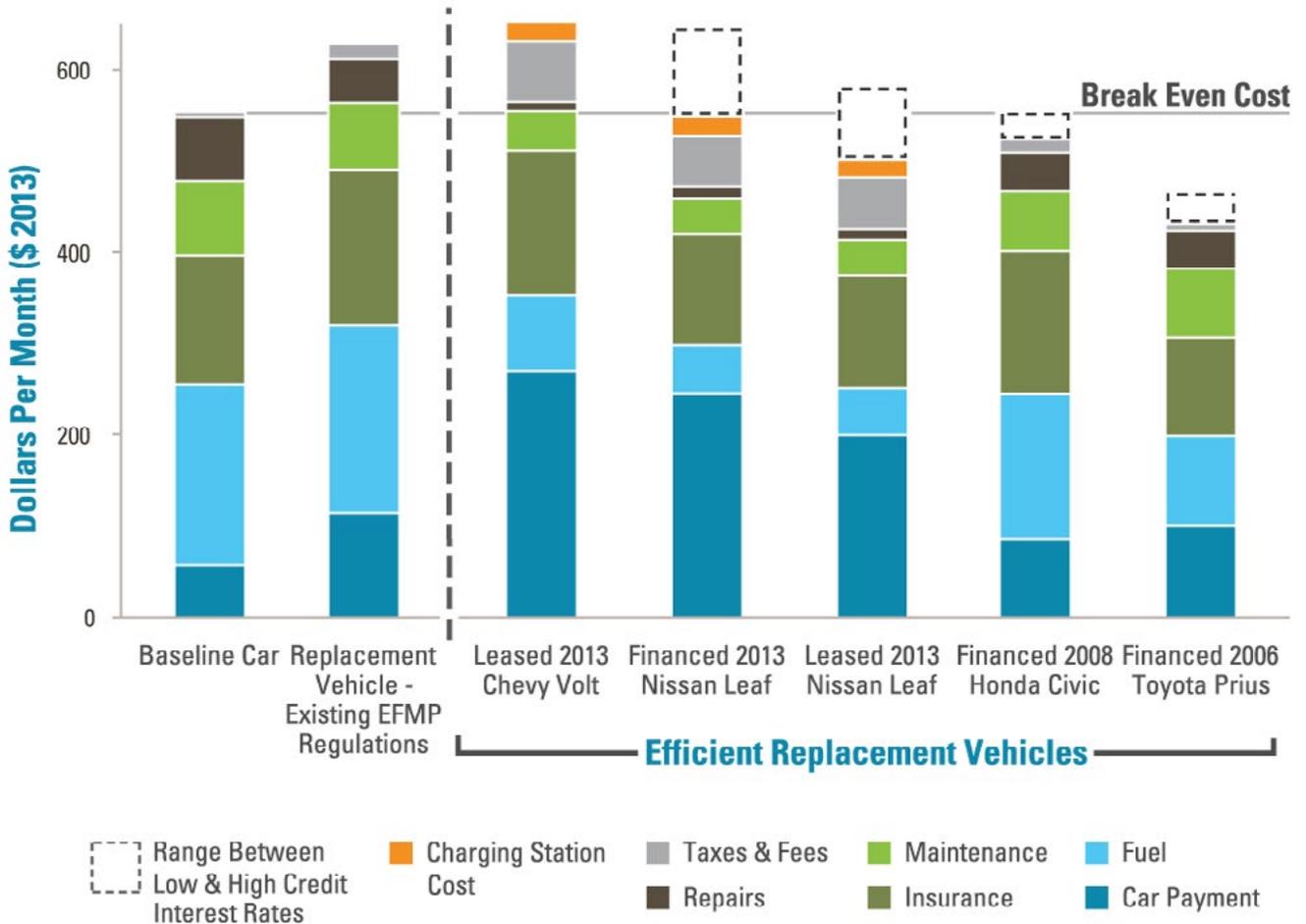


Figure 2: Monthly cost comparisons for different car ownership scenarios, incorporating low-income EFMP and CVRP incentive amounts. For electric vehicles, we assume the provisions set forth by the Charge Ahead California legislation in Senate Bill 1275 will become law, allowing low-income households to apply combined EFMP and CVRP incentives toward used electric vehicles.

Used electric vehicles have the potential to save low-income households over \$100 per month

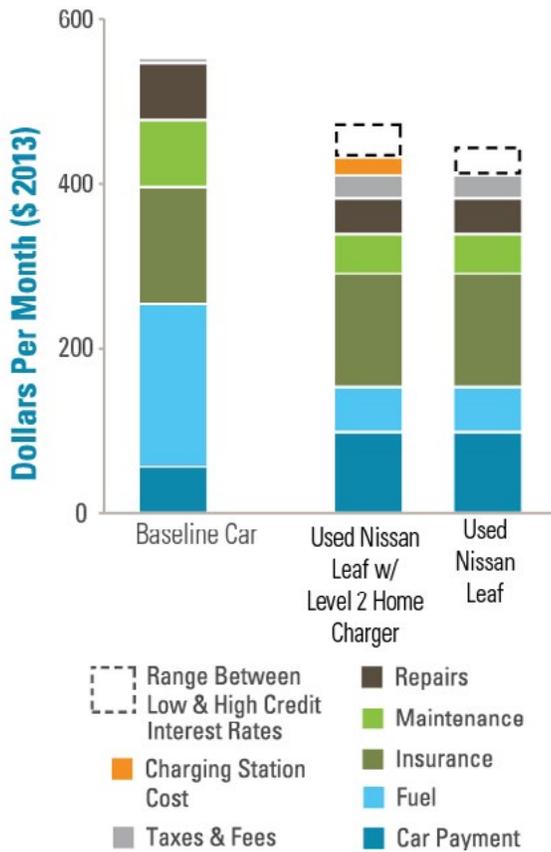


Figure 3: Cost savings potential of electric vehicles. The fuel, maintenance, and repair savings that come from transitioning from an old and high-polluting SUV to a used hybrid can reduce low-income households' total monthly vehicle costs by 30–40 percent.

Used Electric Replacement Vehicles: A Potential Future Market

Used electric vehicles also hold promise as replacement vehicles; several thousand used EVs are expected to turn up in the secondary vehicle market over the next year. In 2011, consumers purchased about 10,000 Nissan Leafs and 7,700 Chevrolet Volts in the U.S. About 40 percent of those purchases occurred in California, and just over 90 percent of those transactions took the form of leases. These numbers suggest that nearly 6,500 electric vehicles are nearing the end of their three-year lease terms in 2014.^{17,18} That's a lot of electric vehicles potentially coming onto California's secondary market, and it's worth looking at what kind of cost savings these cars could generate for low-income households.

Furthermore, this estimate only considers model year 2011 vehicles, and newer EVs will continue to trickle down into the used vehicle market. While this prospect in itself is not enough to rule out the place of high-efficiency conventional vehicles in a well-structured replacement program, it reflects well on the logic of ARB's proposal to provide extra incentives for electric vehicles under the updated EFMP.

Replacing Light Trucks and SUVs

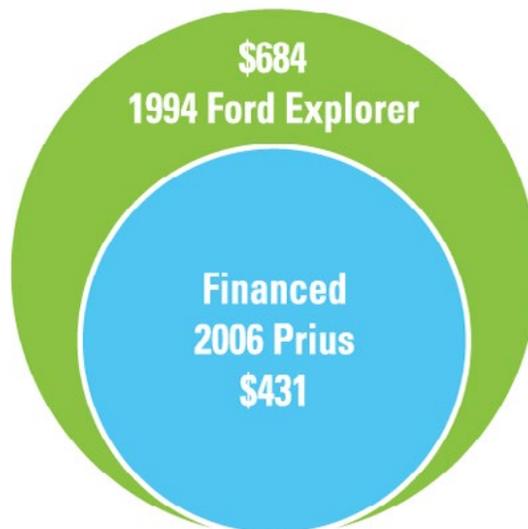
Light trucks and SUVs bear special consideration, given that their emissions and fuel costs are substantially higher than passenger vehicles of comparable model years. In 1995, 43 percent of U.S. new motor vehicle sales were trucks or SUVs, suggesting that these vehicles represent a substantial proportion of the oldest vehicles on the road today.¹⁹

Figure 5 on the following page illustrates several different monthly cost scenarios for replacement light trucks and SUVs. As with the car comparisons above, we use separate “break-even costs” for light trucks and SUVs respectively.

As illustrated above, replacing an inefficient SUV or light truck with a newer vehicle with the same functionality can produce deep savings. Although few high-efficiency light truck and SUV models exist on the secondary market, specific models like the Toyota Tacoma, Ford Ranger, and Escape hybrid do have 30–50 percent better fuel economy than most older, inefficient, high-polluting light trucks. Switching to these vehicles would substantially reduce their drivers’ monthly costs as illustrated by the bars that fall underneath the “breakeven” line in figure four above. Furthermore, as with the switch from a gas-powered to a hybrid car, making the switch from a high-polluting SUV to a hybrid model produces the deepest cost savings of any SUV-to-SUV scenario we analyzed.

There are not many high-efficiency alternatives in the light duty / SUV class today. Accordingly, regulators should explore opportunities to incentivize vehicle downsizing under the EFMP. For households currently driving larger light trucks and SUVs, making the switch to a cheaper, more fuel-efficient car can produce impressive savings, as illustrated in Figure 4.

Downsized replacement vehicles can produce significant monthly cost savings



The fuel, maintenance, and repair savings that come from transitioning from an old and high-polluting SUV to a used hybrid can reduce low-income households’ total monthly vehicle costs by 30–40 percent

Figure 4: Cost savings produced moving from an average high-polluting SUV to a financed 2006 Prius.

Monthly Light Truck & SUV Driving Costs Compared: From High Polluters to EVs

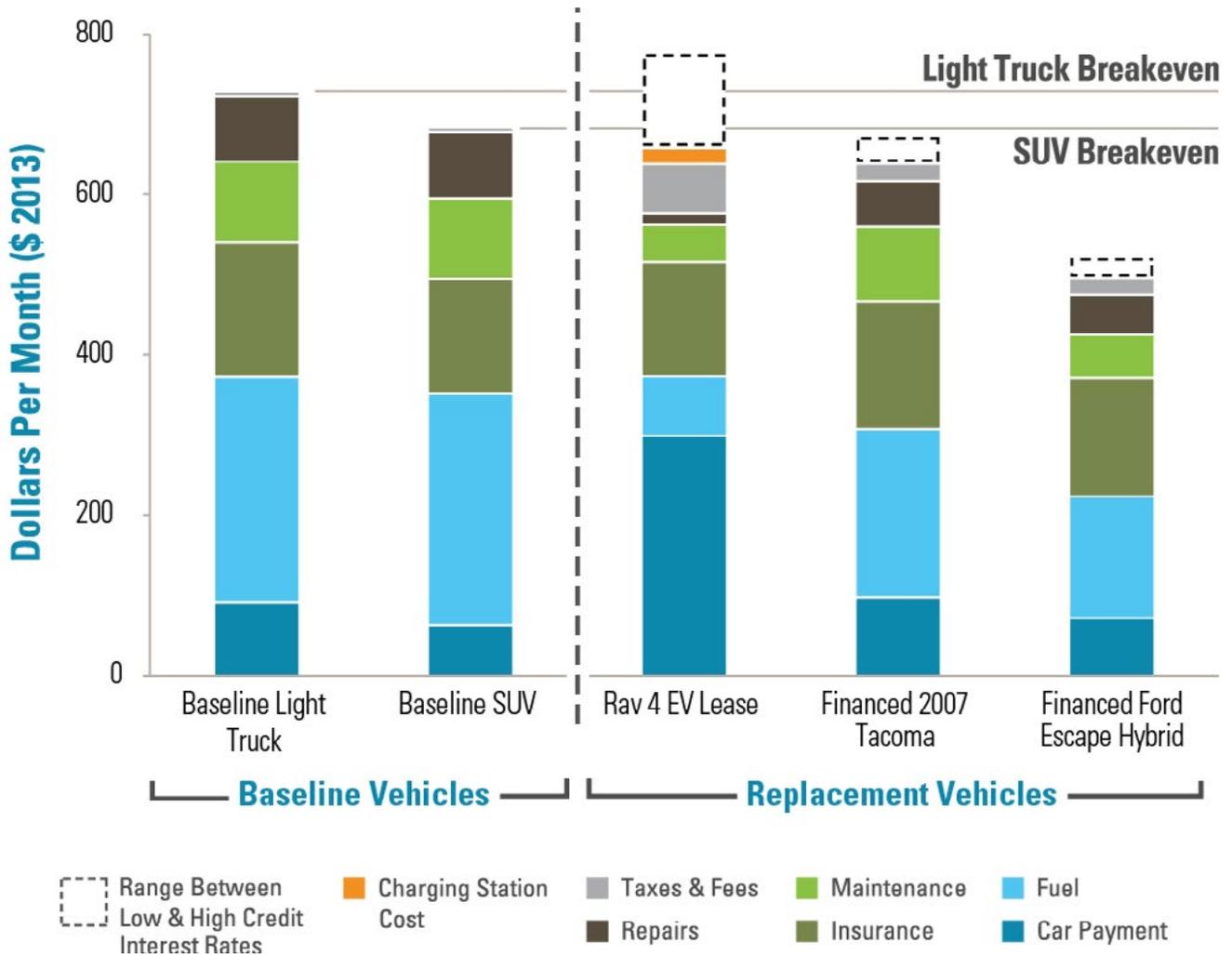


Figure 5: Monthly cost comparisons for different light truck/SUV ownership scenarios. Again for electric vehicles, we assume the provisions set forth by the Charge Ahead California Campaign in Senate bill 1275 will become law, allowing low-income households to qualify for combined EFMP and CVRP incentives.

Is Increasing EFMP Efficiency Requirements Feasible?

Increasing efficiency requirements for all replacement vehicles under the revamped EFMP is a clear win for the state, which benefits from additional greenhouse gas reductions, and also for program participants, who save money and insulate themselves from volatile fuel prices. However, making these cost-saving scenarios a reality relies on the following conditions, both of which we believe are already or can easily be met in California:

- **Affordable high-efficiency vehicles must be available on the secondary (or new) car market in the state.** Transitioning a significant number of low-income households into newer, cleaner, safer, and more efficient vehicles requires that those vehicles be sufficiently available on the used vehicle market and that the cost premium of increased vehicle efficiency does not outweigh its monthly savings.
- **Financing and leasing programs must be accessible to low-income households.** Most low-income households cannot afford efficient replacement vehicles without access to low-cost auto loans or lease programs. ARB's most recent staff report emphasizes the importance of low-income financing in reducing barriers to low-income participation, but it relies solely on air district-level efforts and separate ARB pilot programs for the development of these programs. We recognize the complexity of developing such a program within existing time constraints, and we appreciate the need for flexibility in implementation. It is critical, however, to emphasize that the **EFMP will not be successful in reaching low-income households without a robust method of extending financing assistance. We cannot overemphasize the importance of this element in the forthcoming district-level pilot proposals**, and looking beyond the EFMP, this analysis suggests a clear need for low-income financing programs as part of all of California's efforts to transform the light duty vehicle sector.

The next section explores these preconditions, with the findings that 1) the market availability of affordable efficient vehicles is substantial enough to allow for increased baseline efficiency requirements and 2) a strong low-income financing assistance program will be integral to program success.

California's Affordable Vehicle Market

In response to potential increased efficiency requirements in the revamped EFMP, ARB and California legislators have repeatedly brought up an important question: how many of these "high-efficiency" vehicles are even available on the Californian auto market? To answer this, we used Kelly Blue Book's search engine in combination with data published by the California New Car Dealers Association to develop a rough-cut snapshot of vehicle availability in dealerships and the private car market in key regions in California. Figure 6 on the following page summarizes this research in the two areas of the state that the revamped EFMP will be focused: the San Joaquin Valley and South Coast (Los Angeles area). **We find that efficient and cost-competitive vehicles are available on the secondary and new market in quantities more than sufficient to meet the EFMP's annual vehicle replacement goals.**

While not a definitive analysis due to the lack of detailed publicly available data, this rough-cut estimate does highlight several important facts:

- There are thousands of "high-efficiency" and hybrid passenger vehicles available in the San Joaquin Valley and South Coast. According to our analysis, about 3,300 of these vehicles, rated with a combined fuel efficiency rating of 27 MPG or higher, are currently available from dealerships and many more in the private used vehicle market.
- The number of used high-efficiency vehicles will grow quickly over the next several years as recently manufactured vehicles subject to increased federal fuel efficiency standards trickle down into the used market.

Affordable Used, Certified Pre-Owned, and New Vehicles in the San Joaquin Valley and South Coast Air Quality Districts by Model Year

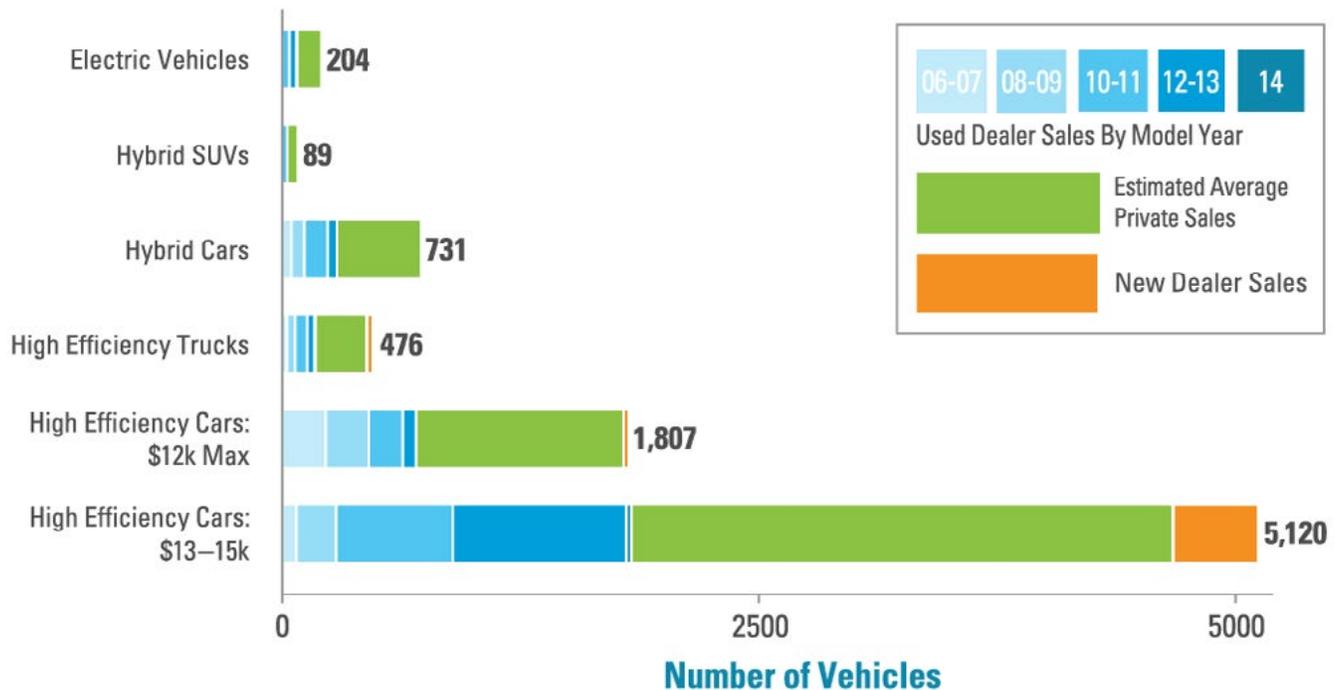


Figure 6: Snapshot of the secondary and new vehicle market in the San Joaquin Valley and South Coast Air Quality Management Districts.²⁰

- Under the current EFMP regulations, replacement vehicles cannot be older than model year 2006. As ARB outlined in their proposed May 6th amendments, most cars made model year 2006 and later cost between \$9,000 and \$15,000. We found that many high efficiency new vehicles fit well into this price range, for example the \$12-15,000 Nissan Versa, which has an exceptional fuel efficiency of 35 MPG.
- A limited number of efficient replacement SUVs and light trucks are available in the regions we analyzed.
- Electric cars, hybrid SUVs, and high efficiency trucks create cash positive scenarios for low-income households under certain conditions, but these vehicles are in short supply on the used market in these regions.

In short, our research indicates that enough high efficiency cars exist in the affordable used and new market to meet near-term EFMP demand.

New ways to grow the efficient used vehicle market

ARB and local air districts should also investigate different ways to grow the pool of high efficiency replacement vehicles by allowing cars sold on the private vehicle market, i.e. outside of dealerships, to participate. EFMP is currently restricted to use at dealerships only, cutting out the roughly 61 percent of vehicles in California that change hands via private transactions (illustrated in green above).²¹ One means of accomplishing this would be for program operators to purchase used high-efficiency cars from companies that own fleets with predictable turnover (e. g. rental car companies) and re-sell them to EFMP retirement-and-replacement program participants.

Issuing vouchers to EFMP program participants before their old vehicles are retired is another way to make vehicles on the private used market eligible for replacement under the EFMP. Community-based organizations hosting SmogCheck events could issue

replacement vouchers that do not require potential EFMP participants to retire and replace their vehicle at the same time. Instead, such vouchers could be used to purchase a replacement vehicle with the full EFMP incentive amount, payable to the seller of the vehicle by the state. Upon determining that a vehicle is eligible for retirement, the state would issue a voucher and initiate a thirty-day grace period. Within this grace period, the customer would be required to find a replacement vehicle through a dealer or the private market, verify the efficiency and air quality characteristics of the replacement through a third party organization, and retire their old vehicle. This strategy would also serve to alleviate what may be a major barrier to participation in the EFMP replacement program: the fact that many potential participants do not have the means to be without a vehicle between retiring their cars and acquiring new vehicles.

Low-cost financing

In order to produce the deepest cost-saving replacement scenarios, low-income EFMP program participants must have access to low-cost capital, as asking a low-income household to front \$4,000 to \$6,000 for a replacement car even after applying a voucher is typically unfeasible. Unfortunately, low-income households in California do not currently have access to affordable auto financing. Current subprime rates in the 6–7 percent range are available in some cases, but oftentimes low-income households are exposed to predatory subprime lending, with lenders requiring large down payments and charging interest rates of 20–30 percent.²² These high rates quickly erode the cost savings generated by switching to a more efficient vehicle, as illustrated below by Figure 7.

How high financing rates reduce the cost savings generated by switching to more efficient vehicles

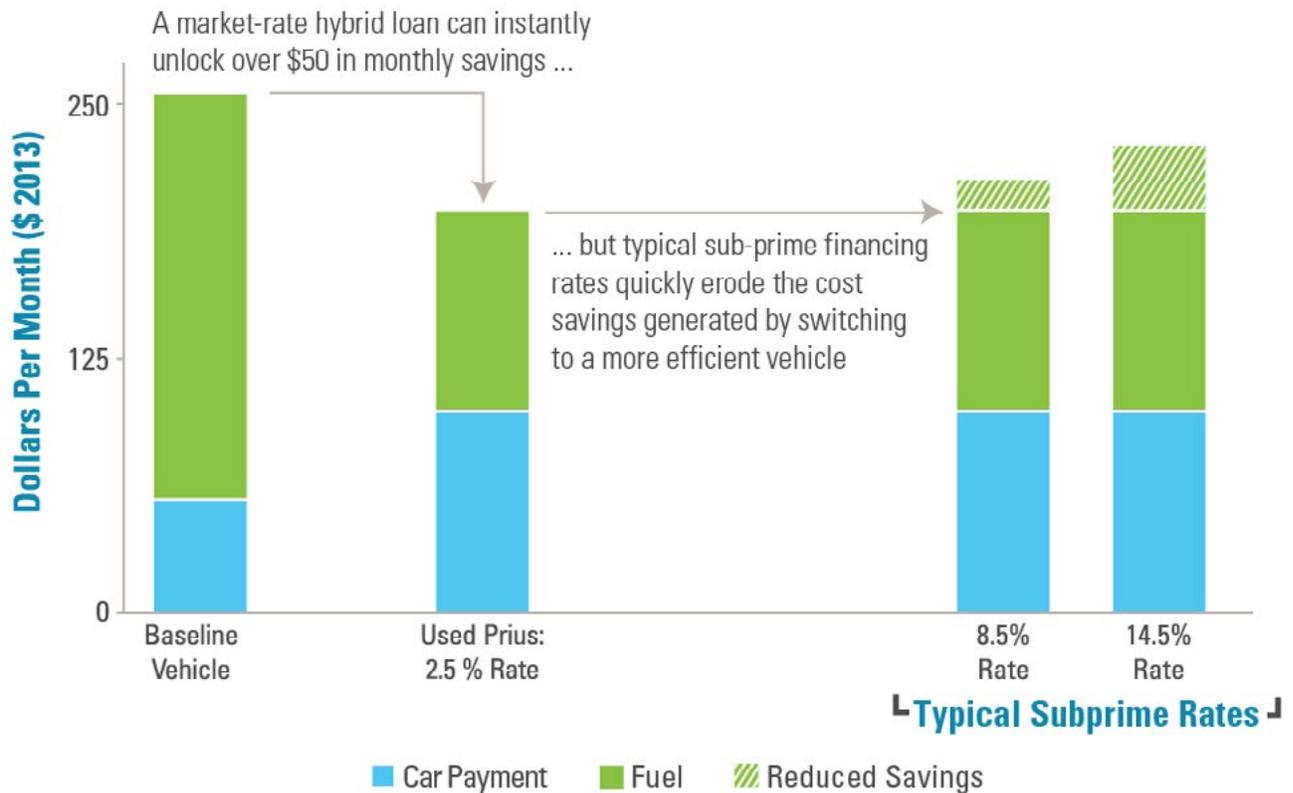


Figure 7: Impact of interest rates on cost savings potential.²³

Several pieces of existing law and proposed legislation have highlighted the potential for low-income financial products to help increase the effectiveness of state-run transportation, programs including SB 459 (Pavley), SB 1275 (De Leon), passed in May 2014 by the California Senate and currently under consideration by the Assembly, includes a loan-loss reserve program as one suggested means by which ARB could satisfy its requirement to increase access to zero and near-zero emissions vehicle in low-income communities.²⁴ Similarly, ARB is beginning the process of developing a pilot financing assistance program for increasing low-income access to advanced technology vehicles.²⁵

While these efforts are still in their early stages, our analysis shows that enhancing credit and access to low-cost financing will be critical to facilitating low-income participation in EFMP. As illustrated by Figure 7, subprime lending rates quickly erode the fuel savings generated by switching to more efficient vehicles – even with the up-front help of an EFMP voucher. Accordingly, ARB must develop a low-income financing program in tandem with the revamped EFMP in order to produce cost savings for low-income households and solicit broad participation. In order to maximize accessibility, policymakers should design these programs to allow the purchase of both advanced technology vehicles and high-efficiency conventional vehicles.

Several models exist, in California and elsewhere, from which regulators, legislators, and the architects of local pilot programs should draw best practices, including:

ARB/CalCAP Truck Loan Assistance Program

This California program offers enhanced financing options for upgrading or replacing heavy-duty trucks to meet greenhouse gas and air quality emissions standards. According to ARB, these loans are “specifically tailored to truck owners that experience challenges obtaining conventional financing because they don’t conform to traditional underwriting standards” – i.e., they are considered high-risk borrowers.²⁶ Funds for these loans come from the California Capital Access Program (CalCAP), a program of the California State Treasurer’s Office that provides financial institutions with guarantees against default on loans to small businesses,

allowing them to take on borrowers with fewer financial resources.²⁷ Since 2012, ARB’s heavy truck loan program has leveraged \$38 million to provide \$273 million in financing to low-income and small-business truckers who would not otherwise qualify for loans.²⁸ Although technically a small business loan program, expanding an analogous consumer loan program to the auto market is crucial, as many Californians are as dependent on their automobiles as truckers are on their trucks.

Pilot Program for Increased Access to Responsible Small Dollar Loans

Building upon a low-income financing program begun by SB 1146 (Florez), SB 318 (Hill) initiated a new financing pilot that provides an alternative to pay day loans for subprime or credit-less borrowers. Under this program, unsecured loans with principal amounts of \$300–\$2,500 are issued to low-income borrowers; capping interest rates and using a market-based approach to drive competition for lower rates amongst lenders also enhances consumer protection. This program, although relatively small and not intended for auto purchases, could inform a subprime auto-lending program under the revamped EFMP.²⁹

Credit-building nonprofit organizations

Several nonprofit organizations have demonstrated considerable success in combining subsidized auto loans and financial education as a means of reducing household transportation costs and building low-income individuals’ credit scores. One nationally operating, Milwaukee-based organization called Ways to Work collaborates with local community-based organizations to offer financial education and low-interest loans to individuals who don’t typically qualify for affordable financing rates.³⁰ Results suggest that the financial education aspect of these programs significantly reduces default rates.³¹ A New England-based organization, More than Wheels, provides similar financial education services and negotiates low interest rates and vehicle prices with local dealerships and financial institutions.³² ARB’s May staff report indicates familiarity with these programs, and California policymakers should endeavor to design similar programs whose scope and benefits go beyond emissions reduction.

Green auto loans:

In recent years, a small number of auto lenders have begun to factor the financial security advantages of more efficient vehicles into the terms of their loans, reducing interest rates for more efficient vehicles under the theory that lower costs at the pump mean more stable overall household finances. US Bank, for example, offers a 0.5 percent reduction in interest rates for the purchase of a higher efficiency vehicle.³³ As of 2011, one third of credit unions surveyed by the Filene Research Institute offered discounted loans for fuel-efficient vehicles.³⁴ The Natural Resources Defense Council has called for further research to firmly establish the connection between vehicle efficiency and loan security, allowing lenders to more accurately reflect the cost savings of high-efficiency vehicles and further reduce loan costs for consumers.³⁵ In future implementation of the EFMP, making eligibility for government incentives contingent upon this type of smart financing could increase the benefits and expand the reach of such programs.

Policy recommendations to unlock high efficiency replacement vehicles

Revising the EFMP to become more than an air-pollution program and capture the co-benefits of reduced costs for low-income Californian households, greenhouse gas reductions, and further access to cap and trade revenues under AB 32 will require the following actions:

- 1. EFMP should include more aggressive baseline efficiency requirements for all replacement vehicles, including those purchased by low-income households.** An increased overall efficiency baseline of 27 MPG for cars and 23 MPG for trucks/SUVs would provide optimal cost savings and GHG reduction benefits, and our research supports that option's feasibility.³⁶

- 2. Low-income financing must become an integral part of EFMP in order for the program to attract participation and reduce low-income household transportation costs.**

A low-income financing component should be required for district-level pilot retirement-and-replacement EFMP programs. Policymakers at all levels should focus on advancing strategies to meet this need.

Conclusion

No Californian should be left behind in the state's push toward a cleaner transportation future. Maximizing the impact of the revised EFMP program by requiring increased efficiency standards for all replacement vehicles and implementing low-income financing solutions is of the utmost importance, especially as the state begins to consider where best to spend transportation-specific cap and trade proceeds in disadvantaged communities throughout the state.

ARB's proposed updates to the EFMP are a definite step in the right direction. These further modifications would transform the EFMP vehicle replacement program into a truly groundbreaking initiative and an outstanding example of California's progress toward a cleaner and more equitable transportation future.

Notes

- ¹ California Air Resources Board, “Staff Report: Initial Statement of Reasons for Proposed Rulemaking: Proposed Amendments to the Enhanced Fleet Modernization Program,” May 6, 2014, available at <http://www.arb.ca.gov/regact/2014/carscrap14/efmp14isor.pdf>.
- ² Lisa Margonelli. *Driving out of the Red with Greener Cars*, New America Foundation, March 2014. Available at http://newamerica.net/sites/newamerica.net/files/policydocs/Margonelli_GreenCars_NAF2014_1_1.pdf.
- ³ Cole Wheeler, Jesse Morris, and Kate Gordon, *No Californian Left Behind: Clean and affordable transportation options for all through vehicle replacement*, February 2014, available at http://thenextgeneration.org/files/No_Californian_Left_Behind_1.pdf.
- ⁴ Estimate generated courtesy of California Department of Environmental Protection and California Air Resources Board, *EMFAC Emissions Database*, available at <http://www.arb.ca.gov/emfac/>. Monthly vehicle costs are based on cars and light trucks observed by ValleyCAN at Tune In & Tune Up events throughout the San Joaquin Valley. These include 1996 Honda Accords, 1998 Chevrolet Malibus, 1994 Toyota Corollas, and 1997 Chevy Silverados, among others. All insurance, tax & fee, maintenance, and repair costs are taken from Edmunds.com “True Cost to Own” tool. Where values were not available for older year models, we extrapolated using available data to estimate pre-2008 monthly costs in these categories. To allow for an apples-to-apples comparison between gas powered vehicles, hybrids, and EVs, we chose not to include depreciation costs in the monthly ownership scenarios as EV depreciation rates are skewed due to complications surrounding accounting and tax incentives. For all comparisons we assume 15,000 miles of annual vehicle miles traveled, a five-year analysis period, and a very conservative fixed motor gasoline price of \$3.71 via U.S. Energy Information Administration, “Weekly Retail Gasoline and Diesel Prices.” U.S. Energy Information Administration, available at: http://www.eia.gov/dnav/pet/pet_pri_gnd_dcus_sca_a.htm. For ARB’s low-income definition, see California Air Resources Board, “Staff Report: Enhanced Fleet Modernization Program Assessment”, California Air Resources Board, November 21, 2013, P. 9. Available: http://www.arb.ca.gov/msprog/aqip/EFMP_Update_Staff_Report_November_2013.pdf.
- ⁵ Except where otherwise noted, this report defines “low-income” as households earning 225 percent or less of the federal poverty level (about \$44,000 a year, pre-tax, for a family of three) – the same definition the California Air Resources Board uses in its Enhanced Fleet Modernization Program guidelines.
- ⁶ California Air Resources Board, “Staff Report: Enhanced Fleet Modernization Program Assessment,” November 21, 2013.
- ⁷ Ibid.
- ⁸ Ibid.
- ⁹ A driver of a model year 1985—1992 vehicle is 76 percent more likely to suffer fatal injuries in the event of an accident compared to a driver of a vehicle made in 2008—2012; National Highway Traffic Safety Administration, “How Vehicle Age and Model Year Relate to Driver Injury Severity in Fatal Crashes,” (August 2013), p. 1., available at <http://www.nrd.nhtsa.dot.gov/Pubs/811825.pdf>.
- ¹⁰ Baseline vehicles are based on cars and light trucks observed by ValleyCAN at Tune In & Tune Up events throughout the San Joaquin Valley. These include 1996 Honda Accords, 1998 Chevrolet Malibus, 1994 Toyota Corollas, and 1997 Chevy Silverados, among others. All insurance, tax & fee, maintenance, and repair costs are taken from Edmunds.com “True Cost to Own” tool. Where values were not available for older year models, we extrapolated using available data to estimate pre-2008 monthly costs in these categories. To allow for an apples-to-apples comparison between gas-powered vehicles, hybrids, and EVs, we chose not to include depreciation costs in the monthly ownership scenarios as EV depreciation rates are skewed due to complications surrounding accounting and tax incentives. For all comparisons we assume 15,000 miles of annual vehicle miles traveled, a five-year analysis period, and a conservative fixed motor gasoline price of \$3.71.
- ¹¹ Fuel price data available from U.S. Energy Information Administration, “Weekly Retail Gasoline and Diesel Prices,” April 7th, 2014, available at http://www.eia.gov/dnav/pet/pet_pri_gnd_dcus_sca_a.htm.
- ¹² All MPG values are based on EPA combined city/highway ratings accessed in April/May of 2014, available at www.fueleconomy.gov; All vehicle price data are based on values obtained in April/May of 2014 from Kelly Blue Book, available at www.kellybluebook.com.
- ¹³ For all comparisons in this report, the “Break-even Cost” is sensitive to the exact characteristics of the baseline vehicle, which in this case is a composite of vehicles commonly found at smog check and repair events in the San Joaquin Valley: model year 1994–1996 Honda Accords, Chevy Malibus, and Toyota Corollas.
- ¹⁴ MY 2002—2009 vehicles are only required to meet a 20-MPG requirement, via California Air Resources Board, “Final Regulation Order: Regulation for AB 118 Enhanced Fleet Modernization Program,” p. 7, available at <http://www.arb.ca.gov/regact/2009/carscrap09/carscrapfro8-12.pdf>; U.S. Department of Transportation. “Summary of Fuel Economy Performance,” U.S. Department of Transportation. Washington D.C.: April 28th 2011, available at: http://www.nhtsa.gov/staticfiles/rulemaking/pdf/cafe/2011_Summary_Report.pdf.
- ¹⁵ Calculated using Kelly Blue Book used car price calculator, available at <http://www.kbb.com/used-cars/?si=buy-known>, (last accessed April 2014).
- ¹⁶ Kevin de Leon, *Senate Bill 1275*, (2014) available at http://leginfo.ca.gov/faces/billNavClient.xhtml?bill_id=201320140SB1275.
- ¹⁷ John Voelcker, “Electric Car Sales For 2011: Modest First-Year Numbers Hardly A Surprise,” Green Car Reports, January 4th, 2012, available at http://www.greencarreports.com/news/1071246_electric-car-sales-for-2011-modest-first-year-numbers-hardly-a-surprise; Green Car Congress, “California Energy Commission awards \$4.5M to ARB for more clean vehicle rebates,” March 1st, 2013, available at: <http://www.greencarcongress.com/2013/03/cec-20130301.html>; John Voelcker, “Electric Car: Lease or Buy?” Green Car Reports, June 24th, 2013, available at http://www.greencarreports.com/news/1084985_electric-car-lease-or-buy; National Public Radio. “Access to Calif. HOV Lane Puts Premium on Hybrids,” National Public Radio, April, 2007, available at <http://www.npr.org/templates/story/story.php?storyId=9626745>.

- ¹⁸ One potential concern is a price premium for HOV stickers on used electric vehicles. One study from 2007 found a \$4,000 price premium attached to used hybrids in California. See “Access to Calif. HOV Lane Puts Premium on Hybrids,” All Things Considered, NPR, 17 April 2011, available at <http://libguides.aacc.edu/content.php?pid=4203&sid=26336>.
- ¹⁹ “U.S. Motor Vehicle Sales: Historical Sales Trends for New Motor Vehicles,” <http://www.senate.michigan.gov/sfa/publications/issues/motorveh/motorve1.html> (last accessed June 2014).
- ²⁰ Hybrid SUV and high efficiency truck purchases are capped at \$20,000. Analysis only considers vehicles within 50 miles of Modesto, 50 miles of Fresno, 25 miles of Bakersfield, and 100 miles of Los Angeles.
- ²¹ California New Car Dealers Association. “California Auto Outlook,” Vol. 10, No. 1, February 2014, available at <http://www.cncda.org/secure/GetFile.aspx?ID=2668>
- ²² Ronald Montoya and Philip Reed, “Car Financing in a Recovered Economy,” Edmunds.com, July 2013, available at <http://www.edmunds.com/car-loan/car-financing-in-a-recovering-economy.html>; Ken Bensing and Elizabeth Frank, “Dealers’ repeat sales of same used car surprisingly common,” Los Angeles Times, August 15, 2012, available at <http://articles.latimes.com/2012/aug/15/business/la-fi-boomerang-cars-20120815>.
- ²³ Some parties have put forward the idea of a 15 percent APR cap for any financed replacement vehicle purchased using an EFMP voucher. As shown in Figure 7, rates these high quickly offset any savings generated by switching to a more efficient vehicle. Low-income finance programs with much lower interest rate caps should be explored under EFMP.
- ²⁴ Kevin de Leon, *Senate Bill 1275*, (2014) available at http://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201320140SB1275.
- ²⁵ California Air Resources Board, “Assembly Bill (AB) 118 Air Quality Improvement Program (AQIP) Funding Plan and Funding Recommendations for Low-Carbon Transportation Greenhouse Gas Reduction Fund (GGRF) Investments for Fiscal Year (FY) 2014-15: Discussion Document,” California Environmental Protection Agency, April, 2014. p. 29, available at http://www.arb.ca.gov/msprog/aqip/fundplan/april2014_aqip_fpworkshop_discussion_document_.pdf.
- ²⁶ California Air Resources Board, “Assembly Bill (AB) 118 Air Quality Improvement Funding Plan and Funding Recommendations,” p. 42.
- ²⁷ California Air Resources Board, “ARB’s Heavy Duty Vehicle Air Quality Loan Program,” p. 1, available at <http://www.arb.ca.gov/ba/loan/on-road/documents/hdvloanprogram.pdf>.
- ²⁸ California Air Resources Board, “California Air Resources Board, “Assembly Bill (AB) 118 Air Quality Improvement Funding Plan and Funding Recommendations.”
- ²⁹ Lou Correa, “Senate Banking & Financial Institutions Committee Bill Analysis,” April 17th, 2013, available at <http://leginfo.legislature.ca.gov/faces/billStatusClient.xhtml>. For additional information see Robert Riechel. “Things to Know: Update on Senator Jerry Hill Bills,” SanBruno Patch, September 13th, 2013, available at <http://sanbruno.patch.com/groups/around-town/p/things-to-know--update-on-senator-jerry-hill-bills>.
- ³⁰ Ways to Work, “About Us: What is Ways to Work?” 2014, available at http://www.waystowork.org/about_us.php.
- ³¹ Margonelli, p. 14.
- ³² More Than Wheels, “Mission” 2011, available at <http://www.morethanwheels.org/mission>
- ³³ U.S. Bank National Association, “Green Auto Loan Rate Discount,” 2014, available at <https://www.usbank.com/loans-lines/auto-loans/green-auto-loan-rate-discount.html>.
- ³⁴ Robert Hall, *Finding Sustainable Profits: Green Lending in Credit Unions*, Filene Research Institute., 2011. p. 15, available at http://filene.org/assets/pdf-reports/249_Hall_Finding_Sustainable_Profits.pdf.
- ³⁵ Max Baumhefner, *Accounting for Vehicle Efficiency in Auto Loans*, Natural Resources Defense Council, February, 2013.
- ³⁶ ARB’s May 6th proposed amendments create separate requirements for replacement vehicles in the “minivan” class. The intent of this amendment is to increase participation amongst families who rely on these vehicles, which could otherwise be excluded by minimum efficiency thresholds. We believe setting separate efficiency requirements for the light truck / SUV class will increase participation similarly, as many low-income Californians rely on light trucks / SUVs for the majority of their transportation needs.