Zero-Emission Vehicle Rebates

What is this measure?

This measure would fund rebates for the purchase of advanced vehicles such as battery electric vehicles, fuel cell electric vehicles, and plug-in hybrid electric vehicles.

Why would someone do this as mitigation?

The beneficial impacts from switching to a zero emission vehicle (ZEV) are equivalent to the difference in well-to-wheels emissions from operating the vehicle vs. the well-to-wheels emissions from operating a conventional gasoline vehicle. In addition to greenhouse gas benefits, increased local adoption of ZEVs reduces local and regional emissions of toxic and criteria pollutants. These reductions provide direct health benefits within the region.

Under SB 1275[1], the legislature codified the following state goals:

• Deploying one million ZEVs and near-zero emission vehicles by the start of 2023.

• Establishing a self-sustaining California market where these vehicles are a mainstream option.

• Increasing access for disadvantaged, low-income, and moderate-income communities and consumers to these vehicles.

The state-wide Mobile Source Strategy[2] and ZEV Action Plan[3] both identify incentive programs as essential in facilitating the transition to zero and near-zero emission technologies. Additional purchase incentives are expected to accelerate the adoption of these types of vehicles, which would provide greenhouse gas, criteria and toxic air pollutant reductions. Also, as the state's electricity grid becomes more renewable, the greenhouse gas benefits from electric vehicles are expected to increase over time.

In the first half of 2017, BEVs and PHEVs made up five percent of new vehicle sales[4] showing that these vehicles are still a relatively small portion of total vehicle sales.

How would you implement this measure?

Implementing Agency

The statewide Clean Vehicle Rebate Program (CVRP) could be used as a model, and the District could implement this measure. The District currently operates an Old Car Buy Back Program and has experience administering a vehicle incentive program that targets the general public.

Enforceability

If the measure followed the same process as the statewide CVRP,[5] which provides rebates for battery electric vehicles, fuel cell electric vehicles, certain plug-in hybrid electric vehicles, and zero-emission motorcycles, participants would apply for rebates and provide the following:

- Proof of current vehicle registration

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[1] https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201320140SB1275
[2] Statewide Mobile Source Strategy: https://www.arb.ca.gov/planning/sip/2016sip/2016mobsrc.pdf
[3] https://www.gov.ca.gov/docs/2016_ZEV_Action_Plan.pdf
[4] http://next10.org/sites/next10.org/files/gii-2017-california-press-release_0.pdf
[5] Statewide Clean Vehicle Rebate Program: https://cleanvehiclerebate.org/eng

- A copy of the sales or lease contract
- Proof of residency
- Proof of income

Under the CVRP, applicants must commit to retaining ownership of the vehicle for 30 consecutive months. This is demonstrated by maintaining the registration and agreeing to be available for follow-up inspection if requested. If vehicles are leased, the lease term must be at least 30 months. The CVRP has established an income cap that makes higher-income consumers ineligible for the program and also established increased rebate levels for low- and moderate-income consumers.

Interaction with Existing Programs

This measure would supplement the existing statewide CVRP. Participants would be eligible to obtain rebates from both programs, which would further reduce the up-front cost of the vehicles. The measure could be targeted toward low- and moderate-income consumers, which is consistent with the focus of the CVRP.

As of August 31, 2017 a total of 1,394 rebates have been approved in Santa Barbara County[6] under the CVRP.

California's Zero Emission Vehicle (ZEV) Regulation[7] includes requirements on the automotive manufacturing and sales side to increase the availability and purchase of vehicles such as PEVs. California's ZEV Action Plan lays out a variety of strategies to meet the state's ambitious goals for ZEVs.[8]

The District's Old Car Buy Back Program[9] is designed to accelerate the retirement of older, more polluting cars, to help turn over Santa Barbara County's passenger vehicle fleet to newer, cleaner engines and technologies.

How would you quantify the benefits?

For this measure, the GHG benefits would be equivalent to the difference between operating the clean vehicle and a typical gasoline vehicle. The *Greenhouse Gas Greenhouse Gas Quantification Methodology for Air Resources Board Low Carbon Transportation Program Consumer-Based Light-Duty Projects*[10] provides reference emission factors for well-to-wheel impacts from operating each type of clean vehicle and typical gasoline vehicles. The methodology also provides annual vehicle miles traveled assumptions for each vehicle type.

Questions for Discussion

- What is the appropriate incentive level to offer through this measure?
- Should other models, such as loan guarantees, be considered?
- Should the measure offer different incentive amounts based on income?
- Should the measure be integrated with an old car buyback program?

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[6] Center for Sustainable Energy (2017). California Air Resources Board Clean Vehicle Rebate Project, Rebate Statistics. https://cleanvehiclerebate.org/eng/rebate-statistics

[7] www.arb.ca.gov/msprog/zevprog/zevregs/zevregs.htm

[8] https://www.gov.ca.gov/docs/2016_ZEV_Action_Plan.pdf

[9] https://www.ourair.org/old-car-buy-back-program/

[10] https://www.arb.ca.gov/cc/capandtrade/auctionproceeds/arb_cbld_finalqm_16-17.pdf

Input Received

Comments Made at Workshops

Opportunities:

- This measure should be linked with infrastructure improvements for the people that are adopting the technology (combination of rebates + infrastructure).
- California's CVRP rebate program and incentive amounts are a good model for this.
- Like the concept of coupling incentives with old car buyback program - the program with is already in place, and works well with low income focus.
- Used car sales should also get incentives (helps with adoption among low income drivers).
- Include fleets in the incentive program.
- Consider medium-duty vehicle incentives (e.g., food delivery trucks), but require that the vehicle be scrapped, to avoid it being sold and used elsewhere (so that reductions are real).
- Incentivize ZEV sales at the dealer level (i.e., make it so the sales force wants to sell ZEVs).
- Include fuel cell electric vehicles in a ZEV rebate program.
- Consideration should be made to the electrical grid, so that the use of renewables can be maximized and the storage of renewable electricity can be increased.
- There should be education, apps, and outreach that help with adoption, access to infrastructure, and the ability to realize the benefits and economic advantages to ZEV adoption.
- Direct fleet purchases should also be an option (for example, purchasing a van for a local health company).
- Consider a neighborhood EV program – the CalEEMod emissions estimator and the CAPCOA *Quantifying Greenhouse Gas Mitigation Measures* document already include a quantification methodology.
- The CARB quantification methodology used for the vehicle incentive measures does not capture the lower costs to operate & maintain ZEVs, as opposed to traditional IC engine vehicles. Suggest refining the methodology to get a better cost-per-ton.

Challenges:

- Lack of infrastructure at residential locations makes adoption of ZEVs infeasible (for example, no place for infrastructure at a condo development).
- Like the concept of offering higher incentive amounts for low-income communities, but how do you verify income?
- Would ZEV adoption happen anyway, for higher income population?
- Don't support the "loan model" concept – too many risks involved in an agency being a lender.
- Will this mean more fossil fuel use, because EVs use fossil fuel electricity?
- Would rebates for electric bikes result in GHG reductions by increasing access to services? Does an e-bike trip actually replace a car (ICE) trip?
- Can crude haul trucks be electric, zero-emission, or low emission vehicles? Would like to see this analyzed, because it makes sense to have the mitigation closely linked to the project impacts.

Comments Submitted in Writing

The Community Environmental Council (CEC) submitted a letter on July 5, 2017.[11] The full letter is available on the District's website. Below are the comments from the letter related to zero-emission vehicle rebates:

- To help ensure that ZEV rebates for local mitigation support additional reductions in GHG emissions, we recommend income eligibility requirements for these rebates that will limit participation to lower-income individuals who are priced out of the ZEV market. We encourage staff to conduct additional research for setting these limits and to contact other agencies or organizations offering ZEV rebates for lower-income buyers, including the Center for Sustainable Energy's Clean Vehicle Rebate Program.

Additional District Discussion

- In response to the question, "Will this mean more fossil fuel use, because EVs use fossil fuel electricity?" District staff clarified at the workshop that the CARB methodology utilized for this measure takes the use of fossil fuel electricity into account. After considering the GHG emissions associated with producing electricity, and the losses involved in distributing electricity to the electric vehicles, this measure still shows overall GHG reductions.
- In response to the question about crude haul trucks being replaced with low-emission vehicles, District staff considered input from the workshop and did additional research to develop another measure, titled "Renewable Natural Gas Trucks". It involves funding the replacement of a traditional diesel heavy duty truck with a compressed natural gas truck that operates on renewable natural gas. A quantification methodology for this measure was also added to the spreadsheet. With this measure, it is important to consider that in order for local benefits to occur, there needs to be a commitment to operate the truck(s) locally.

[11] Comments from the Community Environmental Council (CEC) were received July 5, 2017 (prior to the workshops); some of the comments were already addressed in the workshop materials. See www.ourair.org/ghgmitigation-sbc/.