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de la Guerra, Sheila

**From:** Michael Chiacos <mchiacos@cecmail.org>  
**Sent:** Tuesday, March 19, 2019 8:56 AM  
**To:** sbcob  
**Subject:** County Fleet Electric Vehicle Analysis - Community Environmental Council Comments  
**Attachments:** County of Santa Barbara EV analysis Community Environmental Council Final.pdf

**Caution: This email originated from a source outside of the County of Santa Barbara. Do not click links or open attachments unless you verify the sender and know the content is safe.**

Dear Clerk of the Board, please see the attached letter from Community Environmental Council regarding the Electric Vehicle Plan.

-Michael Chiacos

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**From:** Michael Chiacos  
**Sent:** Monday, March 18, 2019 3:32 PM  
**To:** Williams, Das; Hartmann, Joan; ghart@countyofsb.org; steve.lavagnino@countyofsb.org; peter.adam@countyofsb.org  
**Cc:** Cameron Gray; Sigrid Wright; 'Katie Davis'; Grey, Skip; ebarker@countyofsb.org; Roy Hapeman; awatkins@co.santa-barbara.ca.us; Chen, Frank  
**Subject:** County Fleet Electric Vehicle Analysis - Community Environmental Council Comments

Dear Board of Supervisors,

Please see the attached letter from the Community Environmental Council regarding the County of Santa Barbara Fleet Electric Vehicle Analysis. The analysis has a math error that dramatically distorts the cost of GHG savings, as well as severely overstates the cost of adding electric vehicles and charging stations. The analysis also ignores or is unaware of numerous programs the State of California has set up to help local agencies add electric vehicles to their fleets, in line with California’s goals for 5 million electric vehicles by 2030.

We hope our comments will be considered and used by County staff to add electric vehicles at neutral or even cost savings compared to the gasoline vehicles in the fleet. CEC is ready to help in any way.

Best regards,

-Michael

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Michael Chiacos  
**Director of Energy and Climate Programs**  
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*Community Environmental Council creates regional solutions to climate change.*



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March 18, 2019

Santa Barbara County Board of Supervisors  
105 E. Anapamu St, Suite 407  
Santa Barbara, CA 93101

**Re: Electric Vehicle Analysis**

Dear Santa Barbara County Board of Supervisors,

Community Environmental Council appreciates the work County staff have conducted to modernize their local government fleet and decrease fuel use. However, the lack of clear policy is allowing fuel usage to increase. According to County staff's data, since 2013 fuel usage has increased 7.3 percent while miles traveled has increased by 10.9 percent. Because of federal CAFE standards, all vehicle classes are getting more efficient, but the County has made little progress in deploying fuel efficient hybrid and electric vehicles. Over the last 8 years, the County has deployed only 5 electric vehicles and has utilized them in a very inefficient and wasteful way. As the State of California has a goal of 5 million EVs on our roads by 2030, the County of Santa Barbara is not doing our fair share of this goal.

**CEC asks for the County to consider deploying only electric vehicles for next year's sedan replacements, and use the following programs and ideas below to dramatically reduce the cost of adding chargers and EVs. Next year, a more accurate idea of the true costs and savings of deploying EVs could be calculated. The County should also develop a policy to use the existing EV chargers in a more efficient manner. The existing chargers at the Santa Barbara Administrative Center are ideal candidates to allow charging for two or more fleet vehicles and two or more employee vehicles per day.**

CEC has had numerous conversations over the past decade with staff, asking them to add more hybrids and electric vehicles to the fleet. However, staff have shown little interest in leading the way toward more EV adoption at the County, stating that hybrids and EVs were too expensive. The assessment of EVs as too expensive is based on data that clearly reflects inefficient deployment of both electric vehicles and charging stations, as well as a lack of awareness of many programs the state has set up to decrease costs for local governments. These conversations have increased in the last 18 months, as CEC has provided extensive information to staff regarding incentive programs and use cases showing how hybrids and EVs can be added to the



fleet in a cost neutral or even cost saving manner for the County, while also supporting County ECAP goals.

The recent County of Santa Barbara Fleet Electric Vehicle Analysis again reflects a “Can’t Do” mentality, showing outdated cost information. Staff’s analysis doesn’t acknowledge many programs that could drastically reduce the prices of EVs and charging stations for the County. Meanwhile other Counties are leading the way to cleaner transportation. Denver City and County is deploying 200 EVs by 2020. Pima County is adding 20 EVs per year for the next 5 years. Alameda County is purchasing 25 EVs per year until 2030.<sup>1</sup>

### **Cost of Electric Vehicles:**

The County states that a gasoline vehicle costs \$20,000, a hybrid Toyota Prius \$24,000, a short range EV Nissan Leaf \$29,200, and a long range EV Chevy Bolt \$33,000. The County then adds \$7,700 to the vehicle costs for a charging station to find that a Leaf would cost a \$16,900 more than a gasoline vehicle and save \$2,700 in fuel, for a net incremental cost of \$14,200.

An analysis of the County fleet shows that most existing gasoline cars costs much more than \$20,000. Social Services has 38 sedans in their fleet, all Ford Fusions (MSRP \$22,215) or Ford Tauruses (MSRP \$27,800). Behavioral Wellness has 36 Fusions and Tauruses. These two models are the majority of the County’s sedan fleet

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<sup>1</sup> Pima County News article: <https://www.azpm.org/s/62554-county-commits-to-carbon-reduction-strategy/> Actual Plan with their goal on page 19: [http://webcms.pima.gov/UserFiles/Servers/Server\\_6/File/Government/Office%20of%20Sustainability%20and%20Conservation/Newsroom/1816%20October/2018-Sustainable-Action-Plan-for-County-Operations.pdf](http://webcms.pima.gov/UserFiles/Servers/Server_6/File/Government/Office%20of%20Sustainability%20and%20Conservation/Newsroom/1816%20October/2018-Sustainable-Action-Plan-for-County-Operations.pdf)

Alameda County’s Board-approved [Climate Action Plan](#) commits to phasing out most standard internal combustion vehicles in the fleet and purchasing about 25 new EVs annually until 2030. By 2030, They are aiming to have EVs comprise at least 30% of the fleet.

Denver is a city/county with goals of 200 EVs by 2020  
[https://www.denvergov.org/content/denvergov/en/environmental-health/environmental-quality/Alt\\_Fuels.html](https://www.denvergov.org/content/denvergov/en/environmental-health/environmental-quality/Alt_Fuels.html)



with a minority of Ford Focuses (MSRP \$17,950).

The County states a Nissan Leaf is \$29,200, and the MSRP is \$29,990. A consumer can get a Leaf for \$18,900, not including dealer discounts but using significant incentives on the Leaf, including:

- \$7,500 Federal Tax Credit – Dealers can and do pass along this credit to government fleets, see “Capturing the Federal Tax Credit for Public Fleets” Case Study of Alameda County<sup>2</sup>.
- \$2,500 California Clean Vehicle Rebate Project<sup>3</sup> - Rebates are available for public agencies to purchase or lease new, eligible zero-emission and plug-in hybrid light-duty vehicles. Public agencies are eligible for up to 30 vehicle rebates annually.
- \$1,000 Clean Fuel Reward from Southern California Edison, from the Low Carbon Fuel Standard Program<sup>4</sup>.

Thus, a consumer can bring the starting price to \$18,990 as well as negotiate discounts off of MSRP. The County can find a dealer to pass along the tax credit, can get the \$2,500 California rebate, and can apply for the Low Carbon Fuel Standard, as described below. The 2019 Drive Green California Guide<sup>5</sup>, a guide put out by the State of California Department of General Services, lists a State Contract price for the Nissan Leaf of \$26,414, which after the \$2,500 California rebate is applied would be \$23,914. The County should be able to procure a Nissan Leaf for less than the price of a Taurus and perhaps as inexpensive as a Fusion.

## Cost of chargers

The County lists an extremely high price of \$7,700 for procuring a charging station, and inefficiently uses one charging port per EV, which means the charging station is not utilized for 22-23 hours of each day. The County could dramatically decrease costs of charging stations with 5 simple strategies that other local governments have used:

1. Install and use lower priced chargers for fleet vehicles
2. Deploy a larger numbers of chargers at one time
3. Manage charging to maximize the number of electric vehicles charged per station

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<sup>2</sup> <https://www.georgetownclimate.org/files/report/Capturing-the-Federal-EV-Tax-Credit-for-Public-Fleets.pdf>

<sup>3</sup> <https://cleanvehiclerebate.org/eng/fleet>

<sup>4</sup> <https://evrebates.sce.com/cleanfuel>

<sup>5</sup> <https://www.green.ca.gov/fleet/Documents/DGS-DriveGreenCA-2018-ADAcompliant-FINAL-V1-1.PDF>



4. Take advantage of SCE’s ChargeReady program and PG&E’s EV Charge Network programs, which pay for the entire cost of installation and 25 percent of the cost of chargers.
5. Install charging stations that can provide charging to at least 6 parking spaces/port.

The County uses ChargePoint, which is the most sophisticated and expensive charging station on the market. The CT4000 series costs about \$6,700 for a dual port station.<sup>6</sup> There are many other charging stations that could work well for the County, such as from Clipper Creek, which at \$1,495<sup>7</sup> is less than ¼ of the price. While all ChargePoint’s premium bells and whistles are nice, particularly for public charging where credit card readers and wireless connectivity are needed, fleet and workplace chargers should utilize lower cost chargers. The County’s Charger Cost Assumptions state an average cost of \$14,000 per dual port charger, including installation. Most of these deployments were for 2-3 chargers at a time. By deploying 10 or more chargers at a time, significant savings could occur. According to PG&E’s EV Charge Network cost calculator tool, the County of Santa Barbara could install 10 charging ports (i.e. 5 dual port charging stations) at their Betteravia Campus for \$25,250, or just \$2,525 per charging port. This cost calculations assumes PG&E median cost per port of \$2,300.

**EV CHARGE OWNER UPFRONT COST DETAILS**

	Upfront cost	Paid by	Your upfront cost
Infrastructure	\$100,000	PG&E	\$0
Chargers	\$23,000	You to vendor	\$23,000
Installation	\$8,000	You to vendor	\$8,000
Rebate	\$5,750	PG&E to you	(\$5,750)
<b>Your net upfront cost</b>			<b>\$25,250</b>

Figure 1: Upfront cost estimate for 10 charging ports at the Betteravia Campus from PG&E’s EV Charge Network Program (obtained March 18, 2019).

Additionally, the County could prioritize deployments in conjunction with projects such as the Betteravia Solar Carports and future solar carports. By piggybacking on the construction work occurring, running conduit on carport supports, and using

<sup>6</sup> <https://smartchargeamerica.com/electric-car-chargers/commercial/chargepoint-ct4021/>

<sup>7</sup> <https://store.clippercreek.com/commercial/Share2-HCS-40-Bundle>



carport footings to hang chargers, costs could be significantly reduced, especially compared to trenching through asphalt and adding pedestals at retrofitted sites. County staff have also proposed a very inefficient practice of using one charger per vehicle, which is wasteful of taxpayer dollars. An EV only needs 1 hour to recoup 30 miles of range, so each charger could charge multiple fleet vehicles at night and could also charge multiple employee vehicles per day. Conceivably one charger with a 25-foot cable could charge up to 10 EVs without needing to shuffle vehicles. More practically, one charger could charge 4-6 EVs, 2-3 fleet vehicles at night, and 2-3 employee vehicles during the day. The County Administrative Building in Santa Barbara could be a great place to pilot this, using the chargers that are already installed in the middle of “face-in” parking, allowing multiple fleet vehicles to charge on one side of the parking, and employee vehicles to charge on the other side of the parking.

CEC has been contacted by County employees interested in commuting in EVs, but unable to charge at work and hesitant to push for charging access. The County should develop policies to efficiently utilize existing and new capacity, as well as support County employees who want to drive electric. As over 1,000 of the County’s employees commute over 60 miles each day, a 120- mpg equivalent EV could help them save significantly on fuel costs if the County would support workplace EV charging. If large numbers of County employees drove electric vehicles, they would catalyze additional EV purchases amongst their friends, neighbors, family and co-workers in a phenomenon known as “the first EV on the block.”

Finally, the State of California has recognized that charger costs are a real barrier for fleets and workplaces, and the CPUC has authorized programs to help organizations add chargers. PG&E is currently providing rebates and covering installation costs for EV charging stations through their EV Charge Network pilot program. SCE’s ChargeReady Pilot<sup>8</sup> deployed 1,500 chargers, and recently received bridge funding for another 1,500. The County could add chargers (minimum of 10 per site) and SCE or PG&E would pay for the entire cost of installations and 25 percent of the cost of the chargers. ChargeReady2 is also currently at the PUC, and in 2020 is expected to open for multiple years, eventually deploying 48,500 chargers. These will be offered at similar incentive levels to local governments, and the number of charging ports per site will decrease to from 10 to 4 ports if their current CPUC proposal is approved.

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<sup>8</sup> [www.sce.com/business/electric-cars/Charge-Ready](http://www.sce.com/business/electric-cars/Charge-Ready)



## Low Carbon Fuel Standard (LCFS)

The LCFS is a State of California program to decrease the carbon intensity of fuels used in California by 10 percent by 2020 and 20 percent by 2020. The LCFS program is implemented using a system of tradeable credits, each of which is equivalent to one metric ton of carbon. Credits are generated by producers of cleaner fuels and can be sold to producers whose product will not meet the program's declining benchmark for carbon intensity.

In the case of utilities, credits are generated based on charging for zero emission vehicles. Part of the proceeds from sale of those utility credits are used to increase the rebates from utilities to drivers purchasing electric vehicles. The current SCE rebate is \$1,000 for residential EV drivers, increased from \$450 from 2015-2018.<sup>9</sup> The current rebate from PG&E is \$800, increased from \$500 from 2015-2018.<sup>10</sup> EV Fleet operators and owners of public charging stations can monetize their electric vehicles.<sup>11</sup> We've heard that average EV transit buses can generate \$10,000-\$20,000/year and that current LCFS credits are valued at 25 cents/kWh. SCE's new commercial EV rates eliminate the demand charge, and instead recoup costs using volumetric pricing, allowing EVs to charge for 13 cents/kWh at any time except peak 4-9 pm.<sup>12</sup> PG&E is also proposing new rates that are currently before the CPUC for approval (a tentative ruling is anticipated September 2019). If approved, the new PG&E rates would replace demand charges altogether with a simpler "subscription" charge to establish a consistent, lower cost charging.<sup>13</sup>

The County could program their EVs to charge during the inexpensive off-peak times and fuel their EVs for free after LCFS credits. In fact, the County could fuel the EVs for free while generating excess revenue comparable to their current fueling costs. The County could also conceivably use the LCFS credits to allow free employee charging, or even profit off each kWh an employee or the public uses for reinvestment back into other energy programs or clean transportation services.

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<sup>9</sup> <https://evrebates.sce.com/cleanfuel>

<sup>10</sup> [https://www.pge.com/en\\_US/residential/solar-and-vehicles/options/clean-vehicles/electric/clean-fuel-rebate-for-electric-vehicles.page](https://www.pge.com/en_US/residential/solar-and-vehicles/options/clean-vehicles/electric/clean-fuel-rebate-for-electric-vehicles.page)

<sup>11</sup> <https://www.arb.ca.gov/fuels/lcfs/electricity/electricityh2.htm>

<sup>12</sup> <https://www.utilitydive.com/news/pge-sce-sdgc-pursue-subscriptions-time-of-use-rates-to-drive-more-cali/545907/>

<sup>13</sup> <https://www.utilitydive.com/news/pge-sce-sdgc-pursue-subscriptions-time-of-use-rates-to-drive-more-cali/545907/>





## SUVs, Vans and Trucks

The County's analysis only looks at sedans, and doesn't consider electrifying their SUVs, vans, and trucks. The County has some Dodge Caravans and other 7-8 seat passenger vans. The County could consider Chrysler Pacifica Plug-in Hybrids for these vans. The Pacifica PHEV achieves 33 miles of all electric range at 84 mpge, and then 32 mpg in gasoline hybrid mode. The MSRP is \$39,995, and consumers could get one for \$29,995 after incentives, which is close to the \$26,790 of a Dodge Caravan. The Caravan at 20 mpg would use 5,000 gallons of fuel or \$17,500 (at \$3.50/gallon) for 100,000 miles, whereas the Pacifica might use \$5,000-\$10,000 of fuel, depending on how many miles it travels in electric mode.

The County also has many SUVs. The Mitsubishi Outlander PHEV and Kona EV, along with many other forthcoming SUV EVs, could be considered.

The County also has many light duty trucks. Ford will be selling hybrid and electric F150s next year<sup>14</sup>, and other truck manufacturers have announced additional electrified trucks that the County should plan for.

## Sheriff Vehicles

Sheriff Vehicles haven't been considered in the County's analysis, yet the Sheriff Department has 263 vehicles, many of which drive extremely high annual mileage and are sedans or SUVs. The County reports that Patrol Sedans average 12.1 mpg. The Ford Fusion Pursuit Rated Hybrid achieves 38 mpg.<sup>15</sup> An average patrol sedan thus uses \$28,925 in fuel for 100,000 miles, whereas the Pursuit Hybrid would use \$9,210 of fuel, for a savings of almost \$20,000 per vehicle. Ford also offers a Fusion plug-in hybrid for administrative staff that could reduce fuel and GHG emissions even more and will be selling a hybrid pursuit rated police SUV next year.<sup>16</sup> Some law enforcement agencies in the State of California, including the Clovis Police Department, have been incorporating plug-in electric motorcycles.<sup>17</sup>

## GHG Reduction Costs

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<sup>14</sup> <https://www.tfltruck.com/2018/11/2020-ford-f150-hybrid-450-hp-600-lb-ft-torque-specs-plugin/>

<sup>15</sup> <https://www.ford.com/police-vehicles/hybrid-police-responder/>

<sup>16</sup> <https://www.ford.com/police-vehicles/hybrid-utility/>

<sup>17</sup> <https://www.fastcompany.com/90265749/from-zero-to-sixty-how-an-electric-motorcycle-startup-is-winning-over-police-departments>



Community  
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The County finds a cost of \$3,365 to reduce one ton of CO<sub>2</sub> versus a gasoline car. This is defined as a \$14,200 incremental cost of a short range EV, and a 4.2 MTCO<sub>2</sub> savings. There is an error in this analysis, as buying EVs is a one-time cost but fuel and GHGs are annual savings, so the cost per ton should be divided by a factor of 7.7 years to reflect that the vehicles will travel 100,000 miles at 13,000 miles/year. Thus, the County's calculated cost should be \$437/ton. As our analysis has shown, it is very likely that EVs could be deployed in a much more cost effective and efficient way. It is highly likely that an EV could be deployed at a cost savings to a Ford Fusion or Taurus, allowing the County to save money while reducing GHGs and leading the way towards climate goals.

Sincerely,

A handwritten signature in black ink, appearing to read "Michael Chiraco".

Director of Energy and Climate Programs