

Executive Order B-16-12 Implementation Plan

Department of General Services, Office of Fleet and Asset Management

Revised September 12, 2012

Executive Order

On March 23, 2012, Governor Brown issued Executive Order (EO) B-16-12, ordering *“that California’s state vehicle fleet increase the number of its zero-emission vehicles through the normal course of fleet replacement so that at least 10 percent of fleet purchases of light-duty vehicles be zero-emission by 2015 and at least 25 percent of fleet purchases of light-duty vehicles be zero-emission by 2020. This directive shall not apply to vehicles that have special performance requirements necessary for the protection of the public safety and welfare.”*

Light-duty Electric Vehicle Opportunities

Over the past 5 fiscal years, on average, the State’s Executive Branch purchased just over 600 sedans annually in the non-emergency/response, light-duty category. On February 14, 2011, the Department of General Services (DGS) was able to establish one electric sedan contract for the Nissan Leaf at a per vehicle price of \$33,999. Using the recent electric sedan contract as an example, the State would have the opportunity to substitute sixty sedans for electric sedans when they are scheduled for replacement. However, it is probable that vehicle manufacturers will increase their offerings of light-duty electric vehicles beyond the compact sedan class in the coming years which will allow the State to expand its electric vehicle universe to include vans, pick-up trucks, and utility vehicles which are also utilized to meet the State’s business needs. Once the current fleet purchasing moratorium has concluded, State agencies are expected to begin replacing their existing older fleet assets. The DGS will encourage State agencies to begin including electric vehicles in their fleet procurement plans. Nevertheless, the additional per vehicle cost of ZEV’s will be a financial barrier for State fleets until market conditions reduce ZEV costs. Because State fleets have been operating under a purchasing moratorium since 2009, there is pent up demand to replace many more aged vehicles than agencies’ budgets will likely fund, thereby increasing pressure to stretch vehicle replacement dollars further than ever before. An example of the additional cost associated with electric vehicles is illustrated by comparing the various other sedans also available on the State’s vehicle contract:

Nissan Leaf	Battery Electric	\$33,999
Honda Civic	Natural Gas	\$26,032
Toyota Prius	Hybrid Gas/Electric	\$23,122
Chevrolet Impala	Flex Fuel (E85)	\$17,955
Chevrolet Aveo	Gasoline	\$13,309

Refueling Infrastructure

Electric vehicles are highly dependent on having close proximity to refueling infrastructure in the form of charging stations. The charging station to vehicle ratio depends on the daily driving and parking profile. According to Nissan, a completely depleted Leaf battery will fully charge in 20 hours using the least expensive Level 1 charger and 120v circuit. The Leaf will fully charge in seven hours using the 240v Level 2 charger and can fully charge in as little as 30 minutes using a 480v Level 3 charger that is also the most costly. Charging is typically done while the vehicles are being stored overnight at their permanent parking location. Electric vehicles can also be “topped off” en-route when temporarily parked at a location with an accessible charging station. DGS is currently working with the California Electric Transportation Coalition, the Electric Power Research Institute, and the Sacramento Municipal Utility District to develop a profile of charging stations to vehicles for State vehicles as well as employee and the public’s electric vehicles that more often than not share the same parking facilities. This holistic approach will take into account the newest Executive Order (B-18-12) that calls for providing electric charging for State employees and will seek to find shared charging opportunities wherever possible.

The DGS recently installed 24 Level 2 electric chargers at no cost through Coulomb Technologies’ State and Federal grants to expand electric charging infrastructure. These grant opportunities have allowed DGS to offset an estimated \$150,000 for 24 electric chargers and their installation. The cost of installing electric charging infrastructure can vary dramatically based on the quantity and type of chargers being used, the electrical capacity of the parking facility, and any needed electrical upgrades or construction. Level 1 charging stations are currently available for \$945 a unit (not including installation) and may meet the refueling needs in many fleet and employee scenarios. The DGS chose a more flexible card key charging station to accommodate the need to manage a network of electric charging stations throughout multiple parking facilities from a centralized off-site location. The system DGS chose averaged \$6,250 per charger (including installation) and provides parking management options such as: card key access, bank card payment capability, real time data interface, as well as instant communication to alert parkers about their vehicle’s charging status. This robust system offers DGS with the ability to collect data on the electrical fuel use, collect fees associated with the use of the chargers, and have vehicles repositioned once charging is completed to free up electric vehicle parking spaces more frequently. A less expensive Level 2 charging station is also available and provides the same charging capacity but without the management options. All charging station installation costs are dependent on the electrical capacity of the facility, any needed electrical upgrades and site construction if necessary (e.g.: transformer, electrical panel, wiring, trenching, etc.).

Estimated Fiscal Impact to Acquire Sixty (60) Electric Sedans w/Chargers

Sedans ¹	Level 1 Chargers ²	Level 2 Chargers ³	Installation ⁴	Total
\$2,040,000	\$56,700	\$94,500- \$286,500	\$60,000- \$240,000	\$2.15 - \$2.56 million
*For comparison 60 Toyota Prius Hybrid gas/electric vehicles cost \$23,122 each on State contract for a total of \$1.38 million				

It should be noted that the \$2.15 to \$2.56 million in estimated, up-front vehicle and infrastructure costs is likely to be offset by lifecycle cost savings attributed to the ownership and operation of an electric vehicle. According to the Federal Department of Energy, electric vehicles on average have a 22% lower maintenance cost compared to conventional vehicles (4.1 vs. 5.4 cents per mile). Additional savings will also be achieved through reduced fuel costs. Finally, the California Air Resources Board does still operate the California Vehicle Rebate Project that offers rebates (\$2500 on average) to California based individuals, businesses, non-profits, and government entities for the purchase of electric vehicles. At this time, there is approximately \$16.7 million dollars left of CVRP funding (AB 118 funds) that State agencies may currently apply for when purchasing electric vehicles. However, it is unknown as to how many funds will be available when EO B-16-12 goes into effect in 2015.⁵

Current Vehicle Acquisition Process

OFAM reviews all fleet acquisitions to ensure that several fleet statutes, rules and policies are being adhered to, for example:

- The type of fleet acquisition being requested is necessary and of the appropriate type to meet the stated mission and another similar asset is not currently available that can be redirected (see Government Code §13332.09 circa 1950).
- All light-duty non-emergency vehicles must meet the 1994/2005 federal Energy Policy Act (EPA Act) requiring 75-percent of those acquisitions be vehicles capable of operating on alternative fuels unless exempted (see EO W-100-94).
- SUV's and four-wheel drive trucks require additional justification and receive additional scrutiny before authorization is given to acquire, pursuant to SB 552 (Chapter 737, Statutes of 2003, Burton), see Public Resources Code §25722.5.

¹ 2011 State contract price for each Nissan Leaf \$34,000

² Price quote for a Clipper Creek Level 1 charging station \$945

³ Price quote for a Clipper Creek basic commercial Level 2 charging station is \$1,575. Price quote Coulomb Level 2 charger with card key access and cellular data transmittal is \$4,775

⁴ Installation costs will vary widely depending on the available electrical capacity of the facility; any previous electrical charging backbone that can be reused; the quantity and level of chargers being installed and any upgrades needed to the electrical panels, transformers, conduit runs, or other associated construction. An installation estimate of \$1,000-\$4,000 per charger is shown to depict the wide range of possible installation costs. Installation costs could be as high as \$9,000-\$12,000 in some cases when extensive electrical upgrades are needed.

⁵ <http://energycenter.org/index.php/incentive-programs/clean-vehicle-rebate-project>

- 50-percent of the light-duty non-emergency response alternative fuel vehicle acquisitions must be flex-fuel (E85) vehicles to comply with AB 32, California's Global Warming Solutions Act of 2006 (see EO S-06-06, the State's bio-energy action plan).
- All non-emergency response passenger vehicles and light-duty truck acquisitions that are powered solely by internal combustion engines on fossil fuels must meet the State's minimum fuel economy standard pursuant to AB 2264 (Chapter 767, Statutes of 2006, Pavley), see Public Resources Code §25722.7.
- All light-duty vehicles non-emergency response vehicles must be ordered with solar reflective colors to maximize fuel economy through less air conditioning use (Management Memo 12-03).

Steps to Implement EO B-16-12

1. Enhance Current Vehicle Acquisition Process (OFAM)

- A. July 2012-ongoing, enhance the current vehicle acquisition process to account for the electric vehicles being acquired in the years 2012 and beyond.
- B. July 2012 and beyond, require state agencies to have electric charging infrastructure installed or under development prior to allowing the acquisition of electric vehicles. Have State agencies provide their specific plan on charging infrastructure readiness to support any electric vehicle acquisition requests sent to DGS.
- C. January 2013, develop waiver criteria that includes:
 - Public safety/welfare
 - Performance requirements of required vehicle (i.e.: vehicle size/configuration, passengers, cargo, specialized equipment, geographic territory traveled, etc.)
 - Average number of miles vehicle is driven daily
 - Availability of electric vehicles on state contract in like-type class
- D. July 2012-ongoing, work with state agencies and their fleet data to identify opportunities for electric vehicle uses (i.e.: campuses, parks, correctional institutions, hospitals, and geographic areas where current vehicles travel the fewest daily miles).
- E. June 2013, require state agencies to provide DGS with a detailed 3-year plan on how they are going to implement the executive order and begin acquiring electric vehicles and supporting charger infrastructure beginning in years 2013, 2014 and 2015.
- F. July 2012-January 2015, allow credit for the acquisition of electric vehicles prior to the mandatory 2015 deadline. Allow state agencies to use 2012, 2013 and 2014 electric vehicle acquisition credits to count toward their 2015, 2016 and/or 2017 ten-percent electric vehicle requirement. .
- G. July 2012-ongoing, include electric vehicles as a top priority factor in the vehicle acquisition analysis and approval process. In January 2015, this top priority becomes a

mandatory factor by requiring that 10-percent of all eligible light-duty vehicle acquisitions be electric vehicles.

- H. Only light-duty electric vehicles that are certified to operate on California's highways will be allowed credit for meeting this executive order. No neighborhood electric vehicles, electric carts or other electric utility vehicles will be allowed credit for the ten-percent mandate. Battery electric medium duty and heavy duty vehicles are eligible for credits on a case by case basis. Plug-in Hybrid Electric Vehicles (PHEVs), are eligible for partial credit on a ratio determined by the California Air Resources Board and Department of General Services.

2. Develop Multiple Contracts for Electric Vehicles (PD)

The Procurement Division (PD) is the business arm of the State and as such, leverages State volumes to establish statewide contracts. PD routinely conducts a fleet vehicle solicitation to include all vehicle types as well as fuel types. The PD intends to include an array of electrical vehicles when commercially available as line items, including, but not limited to, the following vehicles types:

- 2-door sedan
- 4-door sedan
- 5-door sedan
- Cross over and/or sport utility vehicle
- Van
- Pick-up truck

The PD anticipates contract award in the second quarter of fiscal year 2012/13.

3. Develop Statewide Contract Electric Vehicle Charging Stations (PD)

The acquisition of charging systems will initially require collaboration between PD, OFAM, RESD and external departments. Time will be required to research, develop and ultimately conduct a competitive procurement to establish a leveraged procurement agreement in order for departments to acquire vehicle charging systems to install within State facilities. As this is an emerging technology this effort might be completed in the first quarter of fiscal year 2013.

Establishing an EV Infrastructure (EVI) work group is the first step to initiate the contract specifications. The EVI work group would be comprised of technical subject matter experts (SME) from the California Energy Commission (CEC), California Technology Agency (CTA), The California Department of Transportation (Caltrans) and various divisions within DGS: RESD, OFAM, DSA, PD and Office of Fiscal Services.

4. Communication to State Agencies (OFAM)

- April 2012, hold State Equipment Council meeting to discuss implementation of B-16-12.
- July 2012, assemble working group of representatives from state agencies to work out details of EO implementation.
- July 2013 (Tentative), develop and issue a management memo that outlines the criteria for meeting EO B-16-12.
- January 2013, January 2014 and January 2015, provide State and Consumer Services Agency Secretary and Governor's Office with on-going status updates.