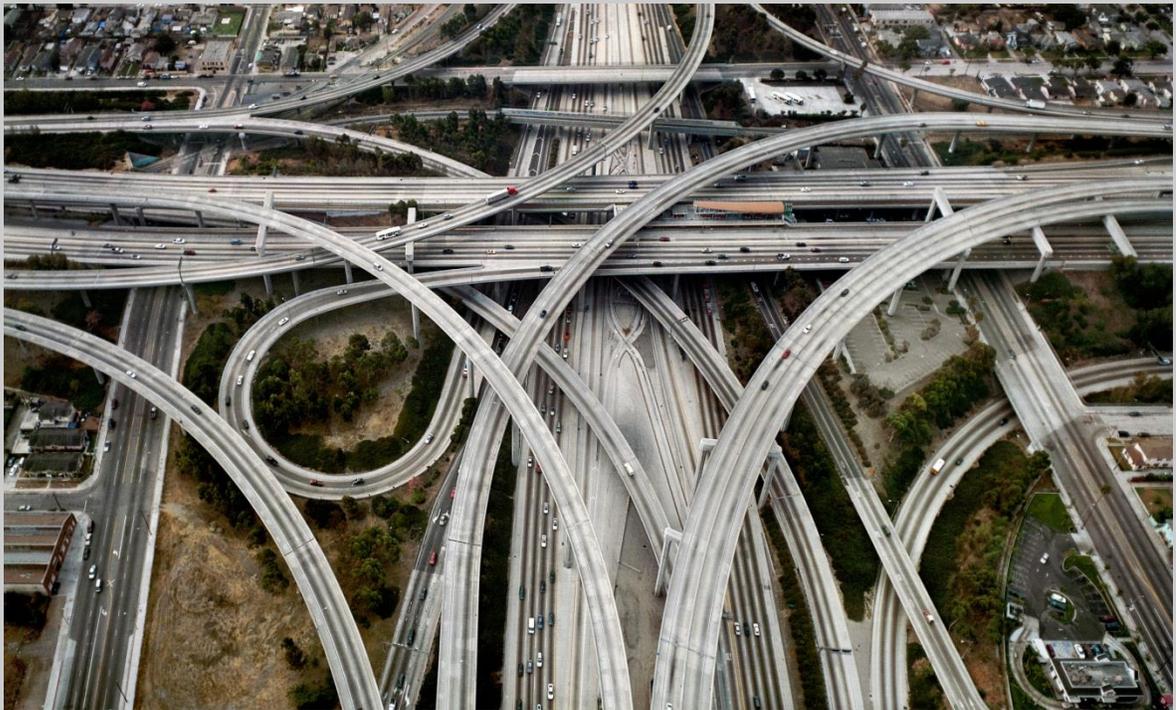


2015 Progress Report for Reducing or Displacing the Consumption of Petroleum Products by the State Fleet - Part One



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Executive Summary

Assembly Bill (AB) 236 (Lieu, Chapter 593, Statutes of 2007) added Public Resources Code §25722.8 (a) establishing the goal of reducing or displacing the consumption of petroleum products by the state fleet when compared to the 2003 consumption levels based on the following schedule:

1. By January 1, 2012, a 10 percent reduction or displacement.
2. By January 1, 2020, a 20 percent reduction or displacement.

Based on 2003 (baseline), 2010, 2011 and 2012 fuel consumption data, the state fleet has surpassed the January 1, 2012 petroleum fuel consumption reduction target of 10 percent and is on pace to meet and/or exceed the 2020 petroleum fuel reduction target of 20 percent. Through fleet vehicle and permit reductions, added fuel consumption reporting requirements, departmental education initiatives, fueling infrastructure development, and the implementation of fuel usage policies, the state reduced its fleet petroleum consumption by 16.07 percent through 2012. This 16.07 percent decrease represents a 6,197,514 gallon reduction in state fleet petroleum fuel consumption. In addition to this drop in petroleum fuel use, the state has increased its use of environmentally friendly alternative fuels by 1,953 percent or 3,270,699 gallons per year.

While the state has had great success in meeting the fleet petroleum fuel reduction goals established in Public Resources Code §25722.8 (a), the Department of General Services (DGS) Office of Fleet and Asset Management (OFAM) experienced significant challenges collecting and aggregating accurate and timely fuel consumption data. To address these issues, OFAM implemented the Fleet and Asset Management System (FAMS), which allows agencies to report their fuel consumption electronically into one centralized database. In addition to providing this tool for departments to accurately report their fuel consumption, OFAM has developed new specifications for the next state fuel card provider that will help correct improperly coded retail fuel types. Despite these critical steps taken to improve fuel consumption data integrity, gaps in accuracy remain due to poor reporting reliability, estimated rental car fuel usage, and the inability of the state's manual fuel pumps to integrate into FAMS.

Path to Petroleum Reduction

As previously reported in the *2012 Progress Report for Reducing or Displacing the Consumption of Petroleum Products by the State Fleet*¹ ("2012 Progress Report"), many policy, administrative, and operational actions have been taken by DGS to reduce petroleum fuel consumption in the state fleet. Since the release of the 2012 Progress Report, DGS has continued its efforts to reduce petroleum fuel consumption and promote alternative fuel adoption. Some examples of these efforts are:

- In 2013, DGS issued MM 13-04,² which provided implementation direction to all state agencies regarding EO B-16-12. MM 13-04 defined ZEVs to include battery electric vehicles (BEVs), hydrogen fuel cell vehicles and plug-in electric hybrid vehicles (PHEVs). The PHEVs are not pure zero emission vehicles but are considered transitional ZEVs that may count toward the ZEV requirement based

¹ [http://www.documents.dgs.ca.gov/ofa/ab236/petroleumreductionstatusreport\(revnov12\).pdf](http://www.documents.dgs.ca.gov/ofa/ab236/petroleumreductionstatusreport(revnov12).pdf)

² http://www.documents.dgs.ca.gov/osp/sam/memos/MM13_04.pdf#search=MM%2013-04&view=FitH&pagemode=none

on their certified electric driving range established by the Air Resources Board. The 10 percent mandate went into effect beginning in fiscal year 2014-15. To date the state has purchased a total of 155 ZEVs, which includes both BEVs and PHEVs.

- In 2013, DGS issued MM 13-01,¹⁰ *State Fleet Asset Oversight*. This MM defines a state fleet asset and OFAM oversight and fleet acquisition policy. It also advises state agencies of their reporting responsibilities for each type of state asset. This MM has led to increased data integrity, increased accuracy in federal and state reporting, and has required state departments to seek OFAM approval for nearly all mobile equipment purchases.
- In 2013, DGS issued MM 13-02,³ which defines new requirements for submitting fleet vehicle acquisition requests. This MM requires all executive branch departments to submit an annual fleet acquisition plan to OFAM for analysis when requesting approval to acquire new or replacement fleet assets. The policy requires state agencies to provide ample justification that additional fleet assets are vital and mission critical. Through the fleet acquisition review process, OFAM also ensures compliance with the U.S. Department of Energy's Environmental Policy Act of 2005 (EPA Act), the state miles per gallon (MPG) requirement and EO B-16-12, *The Governor's ZEV Purchasing Mandate*. Through departmental compliance in the areas referenced above and the verification that all new purchases are vital to meet operational needs, the state expects to see a significant decrease in petroleum consumption.
- In 2013, DGS again partnered with Chargepoint Technologies, Inc. (formerly Coloumb Technologies, Inc.) on their state and federal grants to install an additional 32 Chargepoint electric vehicle chargers in various DGS parking facilities.
- In November 2013, the CEC approved a \$2 million interagency agreement for further electric charging station infrastructure development. The funds will go toward installing approximately 50 to 100 level 2 charging stations statewide in DGS-managed buildings, parking structures and surface lots by 2016.
- In 2014, DGS successfully sponsored legislation (Senate Bill [SB] 1265, Hueso, Chapter 398, Statutes of 2014) to include hybrid vehicles as part of the light-duty vehicles required to meet the state fleet's minimum fuel economy standards, the parameters of which exist in statute.
- In 2015, as a result of the enactment of SB 1265, DGS issued MM 15-03, which announced the new fuel economy standard for passenger vehicles had increased to 38 MPG from 27.5 MPG. The increased fuel economy standard will promote the increased purchasing of standard hybrid vehicles in the state fleet, which will play a significant role in increasing the state's overall average fuel economy and in the reduction of petroleum consumption.
- Ongoing: DGS continues to lead and collaborate with the State Equipment Council (a cooperative body of fleet managers and program administrators from executive

³ http://www.documents.dgs.ca.gov/osp/sam/memos/MM13_02.pdf#search=MM%2013-02&view=FitH&pagemode=none

branch state agencies) on a variety of new policies that are intended to:

- Provide better controls over the state fleet.
- Optimize the use of publicly accessible alternative fuel stations.
- Develop a network of electric charging stations to support the electric vehicles entering the state fleet.
- Provide more accurate and timely reporting of state fleet metrics.

Petroleum Reduction Progress

Our research indicates that there is no clear industry standard for reporting petroleum displacement, and various entities use differing methods to report their achievements. According to the U.S. General Services Administration, the most common way to measure petroleum displacement is to compare gasoline gallon equivalents (GGEs) of each fuel to take into account their different energy densities. The amounts reported in the following fuel usage comparison represent GGEs for each fuel listed. In keeping with the intent of AB 236 to “improve the overall state fleet’s use of alternative fuels,” the methodology used in this report is focused on comparing the full GGE amount of alternative fuels used to the amount of gasoline and diesel used.

Annual Comparisons 2003-2012

Figure 1: Petroleum Reduction Overview

Petroleum Reduction (by year)					
2010		2011		2012	
2003 Petroleum Consumption (Baseline)	38,559,715	2003 Petroleum Consumption (Baseline)	38,559,715	2003 Petroleum Consumption (Baseline)	38,559,715
2010 Petroleum Consumption	32,613,495	2011 Petroleum Consumption	32,579,146	2012 Petroleum Consumption	32,362,201
Difference (Gallons)	5,946,220	Difference (Gallons)	5,980,569	Difference (Gallons)	6,197,514
% Reduction	15.42%	% Reduction	15.51%	% Reduction	16.07%

Figure 1 illustrates the overall state fleet petroleum fuel reduction for 2010, 2011, and 2012; when compared to 2003 petroleum fuel consumption totals.

Figure 2: Fuel Consumption and Reduction Totals

Petroleum Fuels*	2003	2010	2011	2012
Gasoline	30,017,477	27,073,212	26,828,434	26,497,234
Diesel	8,542,238	5,540,283	5,750,712	5,864,967
Total Petroleum	38,559,715	32,613,495	32,579,146	32,362,201
Petroleum Percentage of Total	99.5%	89.95%	90.29%	90.82%
Percentage Petroleum Reduction from	NA	-15.42%**	-15.51%	-16.07%
Alternative Fuels***	2003	2010	2011	2012
Compressed Natural Gas	159,304	169,049	175,721	183,157
LPG/Propane	0	65,645	68,119	45,927
E85 Ethanol	0	160,054	169,481	200,083
Electricity	0	0	0	0
Biodiesel****	0	3,250,959	3,090,182	2,841,532
Hydrogen	0	0	0	0
Liquid Natural Gas	0	0	0	0
P-Series	0	0	0	0
Total Alternative Fuels	159,304	3,645,707	3,503,503	3,270,699
Alternative Fuel Percentage of Total	0.05%	10.05%	9.71%	9.18%
Percentage Change from 2003	NA	2,188.52%	2,099.26%	1,953.08%

Source: Voyager and State Agencies' Bulk Fuel as reported to OFAM

*Petroleum fuels measured in gallons

**Updated from the 13% reported in 2012 Progress Report (explanation for revision below)

***Alternative fuels measured in gasoline gallon equivalents

****Biodiesel fuel numbers consist of both 5% and 20% biodiesel fuel purchases

Figure 2 illustrates total fuel usage by the state fleet as reported by the executive branch for the base year 2003, and annual fuel usage for 2010, 2011 and 2012.

Figure 3: AB 236 Progress

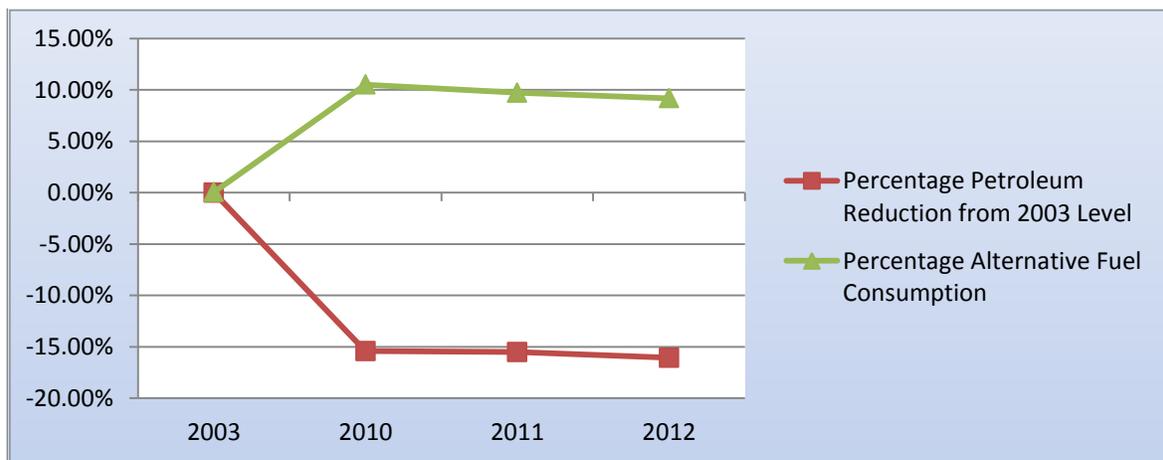


Figure 3 illustrates petroleum fuel reduction and alternative fuel adoption progress.

Revision of the 2012 Progress Report

During the initial phases of collecting, aggregating and analyzing reported fuel consumption data, OFAM identified an opportunity to improve the ease and accuracy of the fuel reporting process through the creation of a petroleum reduction reporting tool. This tool now allows OFAM to extract the fuel data and do the calculation of the overall petroleum reduction percentage when compared to the 2003 baseline through an automated process. Using the new automated tool, OFAM identified some inaccuracies with the data previously reported by other state departments. Working with departments to perfect their reporting procedures and previously reported 2010, 2011 and 2012 numbers, OFAM has revised the state fleet's 2010 fuel usage numbers that were previously reported in the 2012 Progress Report.

In the 2012 Progress Report, the state reported a total of 33,509,180 gallons of petroleum used, which reflected a 13 percent petroleum reduction in comparison to the 2003 petroleum usage. In this report, that usage number has been updated to reflect further data adjustments that were made by reporting departments in FAMS. Based on the revised reported numbers, the total petroleum usage for 2010 was 32,613,495 gallons, which reflects a 15.42 percent petroleum reduction in comparison to the 2003 petroleum usage.

Working with state departments to finalize accurate fuel consumption data for 2010, 2011, and 2012 and to refine the fuel reporting process has been an intensive effort that has taken approximately two years to complete. Now, with the correct reporting procedures and controls in place OFAM can more quickly and accurately produce the reports required by AB 236. In OFAM's effort to become current on its AB 236 fuel reporting requirements, this report is being treated and labeled as part one of two reports; OFAM intends to release a second petroleum reduction report this fall that will include fuel consumption data for calendar years 2013 and 2014. With the release of this report, OFAM will become current with its AB 236 fuel reporting requirements.

2011 and 2012 Fuel Usage

In 2011 the state fleet continued its progress toward reducing petroleum and meeting its 20 percent by 2020 reduction goal. Petroleum consumption decreased by 0.11 percent from 2010, resulting in an overall 15.51 percent decrease from the 2003 baseline levels. Total consumption for 2011 consisted of 90.29 percent petroleum and 9.71 percent alternative fuels. This continued reduction in petroleum consumption can primarily be attributed to the implementation of EO B-2-11 in 2011. EO B-2-11 directed state agencies to justify every fleet asset and vehicle home storage permit in order to eliminate those not essential or cost effective.

Figure 1 reports a 16.07 percent reduction in petroleum consumption in 2012 compared to the 2003 baseline levels. This is a 0.91 percent decrease from 2011, which is primarily attributed to continued fleet reduction that began with EO B-2-11.

The data presented in this report shows a general trend of reduced consumption in both petroleum and alternative fuels. Over the 2010-2012 period, petroleum consumption decreased by a total of 0.77 percent while alternative fuel consumption decreased by a total of 10.3 percent. While there was an upward trend in CNG and E85 fuel consumption, there was a 409,427 gallon reduction in biodiesel consumption from 2010 to 2012, which accounts for a majority of the decrease in alternative fuel usage. However, we expect an increase in overall alternative fuel consumption in the future as the state moves toward

more advanced alternative fuel technology, such as battery electric vehicles, fuel cell electric hybrids and plug-in hybrid electric vehicles.

Reporting Procedures and Challenges

Benchmarking and Data Issues

To benchmark state fleet petroleum consumption for 2003, OFAM surveyed all executive branch agencies in order to obtain their bulk fuel totals and natural gas procurements. Many agencies had records that went as far back as 2003 but some did not. In those instances where 2003 records were unavailable, OFAM asked agencies to provide their fuel numbers for the years nearest 2003, and then extrapolated the approximate fuel usage for 2003 using a straight line assumption from the closest known fuel records. The most reliable source of fuel data came from the state's fuel card provider, U.S. Bank/Voyager. Voyager's historical archives were utilized to isolate retail fuel sales from 2003.

In order to accurately represent the state fuel consumption from rental vehicles and off-contract fuel purchases,⁴ OFAM contacted Enterprise Car Rentals to request fuel purchase data from state vehicle rentals. With the collected fuel purchase data and determination of an average MPG for the "commonly rented vehicle," an additional commercial car rental fuel assumption total was added for each reported calendar year (1,350,000 gallons). Additionally, OFAM has added an off-contract gasoline purchasing total of 1,026,447 gallons for all reported years based on the formulation of the 2003 baseline numbers.

Inaccurate Vendor Codes

Inaccurate fuel product coding by retail merchants supplying fuel to state agencies and/or credit card companies that process the sales, inhibits the state's ability to capture accurate data about E85 fuel being used by the state fleet. OFAM has converted known anomalies to the correct E85 code whenever possible. As an example, for E85 fuel currently being miscoded as M85 (methanol), OFAM transferred the miscoded fuel to the E85 category. DGS has developed new specifications for the next state fuel card provider contract that will require the vendor to reconcile improper fuel product codes with the merchants prior to sending the state its fuel usage reports.

Collect Fuel Data and Report Petroleum Consumption

To gain visibility into the petroleum consumption of the state fleet, DGS needs access to critical information about California's state fleet inventory. OFAM deployed the FAMS data warehouse, and starting in 2009 began requiring all state agencies to report their vehicle fleet asset and utilization data, which includes fuel consumption by fuel type. Statewide fleet reporting can only be as complete and accurate as the data that the DGS receives from other agencies. Using accurate data from the FAMS is the linchpin of measuring petroleum reduction. Every state agency is now able to go online and enter their fleet data into FAMS. If state agencies are diligent and consistent in updating FAMS, then DGS can analyze and report on agencies' respective progress in meeting petroleum reduction goals, and other fleet-related mandates. The accuracy of the data being entered by state agencies is critical to DGS' ability to accurately analyze the state fleet's progress

⁴ Includes fuel purchases not made using the Voyager card but purchased through other means for which the state employee gets reimbursed through the travel expense claim process.

and forecast petroleum consumption trends.

The other challenge for FAMS is receiving bulk fuel data through electronic feeds from state agencies. Most state-operated fuel pumps do not have electronic card readers and rely on manual systems to purchase, dispense and account for bulk fuel use. These older systems need updating to incorporate card reading fuel management solutions that can automatically feed the FAMS data warehouse. This upgrade would eliminate many of the issues associated with receiving accurate and timely bulk fuel data from state agencies. This solution would be costly to implement and would require significant financial investment by state agencies that procure and dispense bulk fuel.

Conclusion

Since the enactment of AB 236 (Lieu) in 2007, DGS and departmental fleets have worked diligently to meet the petroleum reduction goals established in Public Resources Code §25722.8 (a). Following the *California Action Plan for Reducing or Displacing the Consumption of Petroleum Products by the State Fleet*, OFAM has implemented numerous policies and procedures that have helped reduce petroleum consumption in the state fleet by 15.51 percent in 2011 and 16.07 percent in 2012. These reductions represent total yearly petroleum consumption reductions of 5,980,569 and 6,197,514 gallons, respectively. With the decline of fleet petroleum fuel consumption, and aided by alternative fuel policies, the state fleet has increased its use of environmentally friendly alternative fuels by 1,953 percent or 3,111,395 gallons per year since 2003.

While the initial 2010 petroleum reduction numbers reported in the 2012 Progress Report (revised in this report) were primarily the result of the Governor's EO B-2-11 (which reduced the state fleet by 6,893 assets), and an ongoing budget crisis which put a moratorium on fleet purchases, OFAM and participating departmental fleets continued that reduction in 2011 and 2012 by implementing better procedures and more effective fuel usage and reporting policies. Through these policies and procedures petroleum fuel consumption has decreased by an additional 0.67 percent, representing 216,945 gallons.

If state agencies continue to reduce/displace petroleum at their current rate, the state fleet is on a trajectory to exceed the 20 percent petroleum reduction goal before 2020. However, despite the great successes that have been achieved in reducing state fleet petroleum fuel consumption, challenges remain in increasing reporting reliability, accurately collecting rental car fuel usage data, and integrating data from the state's manual fuel pump stations. OFAM, in conjunction with departmental fleets, will continue to find ways to address these challenges and meet the state's fleet petroleum fuel reduction goals.