



PROGRESS REPORT FOR REDUCING OR DISPLACING THE CONSUMPTION OF PETROLEUM PRODUCTS BY THE STATE FLEET

2016

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EXECUTIVE SUMMARY

Successes to Date

In 2007, Assembly Bill (AB) 236 (Lieu, Chapter 593, Statutes of 2007) added Public Resources Code §25722.8 (a)¹, which established aggressive goals of reducing or displacing the consumption of petroleum products by the state fleet when compared to the 2003 consumption levels. AB 236 mandated that, by January 1, 2012, the state fleet reduce or displace its petroleum consumption by 10 percent and, that by January 1, 2020, the state fleet increase that reduction to 20 percent.

To date, the state fleet has met and exceeded the initial 10 percent reduction goal, and it is on pace to meet the 20 percent goal four years ahead of schedule. In 2012, the state fleet achieved a 14.9 percent petroleum reduction, meeting and exceeding the first reduction target. In 2015, that reduction increased to 19.2 percent, which puts the state fleet on pace to meet and exceed the second petroleum reduction target of 20 percent by 2016 and represents a reduction of 7.4 million gallons in annual state fleet petroleum fuel consumption from the 2003 baseline. In addition to this drop in petroleum fuel use, the state increased its use of environmentally friendly alternative fuels by 237.4 percent or 378,182 gallons in 2015 when compared to the baseline.

These reductions have been accomplished through a combination of efforts, including:

- **Fleet vehicle reductions:** Reducing fleet vehicles, per Executive Order B-2-11, significantly lowered the amount of fuel that was consumed annually by the state fleet. Having fewer state fleet vehicles was a key factor in the fuel consumption reduction from 2003 to 2012.
- **New fuel consumption reporting requirements:** Increased fuel reporting requirements have allowed the Department of General Services (DGS) to accurately track and report on departmental petroleum fuel consumption. Through the newly developed Green Fleet website², statewide and department-level fuel consumption is tracked and publicly displayed to provide a transparent view of the state fleet's fuel and greenhouse gas (GHG) emissions reduction progress.

Key Points

- 19.2 percent reduction in fuel, when compared to the 2003 baseline.
- Reduction of 7.4 million gallons of annual petroleum fuel being used.
- 237.4 percent increase in alternative fuel usage.
- More accurate and defensible reporting methodology.
- Increased transparency through the Green Fleet website.
- Over 3 million gallons of additional petroleum reduction in 2016 through the use of renewable diesel fuel.
- More fuel efficient vehicles through an aggressive new ZEV and hybrid first policy and new vehicle replacement standards.

¹ https://leginfo.ca.gov/faces/codes_displayText.xhtml?lawCode=PRC&division=15.&title=&part=&chapter=8.3.&article=

² <http://www.green.ca.gov/fleet>

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- **Departmental education initiatives/outreach:** Through the quarterly State Equipment Council and public outreach events, DGS introduces new fuel-efficient technology to state fleet managers and state employees.
- **Implementation of efficient vehicle adoption and fuel usage policies:** DGS has implemented an aggressive renewable diesel purchasing mandate and has pushed the adoption of zero-emission vehicles (ZEVs) and hybrid vehicles through strong compliance review and by incentivizing non-internal combustion engine vehicles through the DGS leased fleet's rate structure. These policies have increased the number of ZEV and hybrid vehicles in the state fleet from 686 in 2012 to 2,051 in 2016.

Improved Reporting Accuracy

In addition to taking aggressive measures to meet and exceed these goals, DGS has also worked to refine our reporting methodology to more accurately reflect and report on the state fleet's petroleum reduction and displacement. There are two significant changes (reflected in this report) to the reporting methodology and data inputs used in the 2015 Progress Report for Reducing or Displacing the Consumption of Petroleum Products by the State Fleet³ (hereafter "2015 Progress Report"):

1. **New blended-fuel reporting methodology:** DGS modified the methodology used for reporting blended alternative fuels – specifically E85 and biodiesel fuels – to better represent the true alternative and petroleum fuel consumption totals, and to better align with updated industry standards. Previously, blended alternative fuel consumption was reported in its entirety as alternative fuel consumption. This report will now separate and report the consumption of blended fuels according to the fuel type's petroleum/alternative fuel blend ratio.
2. **Corrected reporting inconsistencies:** DGS identified anomalies and inconsistencies with how fuel consumption was reported in the *2015 Progress Report* and has made updates to correct those anomalies. In the *2015 Progress Report*, fuel consumption was incorrectly over-reported due to the inclusion of off-contract and rental car fuel consumption totals – which accounted for 2.4 million gallons of previously reported fuel consumption. These consumption totals were removed because they do not represent fuel consumption by the state fleet and, as such, are inconsistent with AB 236's state fleet fuel consumption reporting requirements.

Due to the removal of the off-contract and rental car fuel data and the change in how blended fuels are reported, the petroleum consumption for 2012 reported in the 2015 Progress Report has been updated to reflect a 14.9 percent decrease in petroleum consumption compared to the previously reported 16.1 decrease. While these changes lower the compliance percentages from the 2015 report, the revised data establishes a more accurate and defensible representation of the state fleet's fuel consumption.

³ [http://www.documents.dgs.ca.gov/ofa/ab236/PetroleumReductionStatusReport\(2015\).pdf](http://www.documents.dgs.ca.gov/ofa/ab236/PetroleumReductionStatusReport(2015).pdf)

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Looking Ahead

While the state fleet is on pace to meet and exceed the 20 percent petroleum reduction goal by 2016, DGS is committed to continuing its efforts to reduce the state fleet's petroleum consumption and GHG emissions. DGS will continue to take policy, administrative, and operational actions to further these goals. Some examples of actions DGS will be taking are:

- **Renewable diesel mandate:** Through policy issued in 2015, DGS intends to eliminate the state fleet's use of bulk petroleum-based diesel and convert all bulk diesel usage to renewable diesel. In 2016, over 3 million gallons of petroleum diesel were converted to renewable diesel used by the state fleet.
 - **ZEV/Hybrid First policy:** Through policy issued in 2016, California has become the first state government in the nation to adopt a ZEV and hybrid vehicle first purchasing policy. This policy mandates that a ZEV or hybrid vehicle must be purchased if there is one available that can meet operational needs.
 - **New life cycle replacement thresholds:** In 2017, DGS will be setting optimum age and mileage replacement thresholds that are significantly lower than the current mileage thresholds for the state fleet's vehicles. Not only will these thresholds result in cost savings, they will also allow the state fleet to cycle out inefficient petroleum-based vehicles and cycle in hybrids and ZEVs at a faster rate.
 - **Infrastructure deployment:** To support the increased adoption of plug-in vehicles, the DGS Office of Sustainability has formed a dedicated team to work with state departments and lead the state's efforts on electric vehicle (EV) charging infrastructure installation. This team will promote, on a statewide level, the deployment of EV charging infrastructure and will work with state departments to develop comprehensive long-term plans for EV infrastructure installation.
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Path to 2015 Petroleum Reduction

Assembly Bill (AB) 236 (Lieu, Chapter 593, Statutes of 2007) added Public Resources Code §25722.8 (a)⁴ 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.

From 2003 to 2012 the state fleet achieved a 14.9 percent petroleum reduction, meeting and exceeding the first reduction target. In 2015, that reduction increased to 19.16 percent, which puts the state fleet on pace to meet and exceed the second petroleum reduction target of 20 percent by 2020.

As previously noted in the 2015 Progress Report, many policy, administrative and operational actions have been taken by DGS that have led to the petroleum reductions detailed in this report. Since the release of the 2015 Progress Report, DGS has continued its efforts to reduce petroleum fuel consumption and promote alternative fuel adoption. Some examples of actions that have further contributed to these reported reductions are:

1. In 2015, DGS participated in discussions that assisted in the enactment of AB 692 (Quirk, Chapter 588, Statutes of 2015).⁵ This bill requires, commencing January 1, 2017, that at least 3 percent of the aggregate amount of bulk transportation fuel purchased for the state fleet annually meet the California Air Resources Board's (ARB) very low carbon fuel standard. The bill also requires, commencing January 1, 2018, the very low carbon bulk transportation fuel purchasing amount be increased by 1 percent each year until January 1, 2024. ARB defines "very low carbon fuels" as fuels having a maximum carbon intensity of 40 percent of the closest comparable petroleum fuel for that year.
2. In preparation for AB 692, DGS executed contracts for renewable diesel, a fuel with low carbon intensity and, in December 2015, DGS issued State Administrative Manual (SAM) Section 3627,⁶ which mandates the use of renewable diesel in lieu of conventional diesel and biodiesel fuel for bulk fuel purchases. The state averaged approximately 5.7 million gallons of diesel and 2.9 million gasoline gallon equivalents (GGEs) of biodiesel consumption in the three years prior to implementation of this policy. The transition from diesel and biodiesel to renewable diesel resulted in approximately 20,000 GGEs of renewable diesel being purchased in 2015, and will likely result in a much higher renewable diesel adoption rate over the next few years.

⁴https://leginfo.legislature.ca.gov/faces/codes_displayText.xhtml?lawCode=PRC&division=15.&title=&part=&chapter=8.3.&article=

⁵ https://leginfo.legislature.ca.gov/faces/billTextClient.xhtml?bill_id=201520160AB692

⁶ www.documents.dgs.ca.gov/sam/SamPrint/new/sam_master/sam_master_file/chap3600/3627.pdf

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Renewable diesel is biomass-based diesel fuel that has the same chemical properties as petroleum-based diesel, with less than half the carbon intensity (CI). While renewable diesel and biodiesel have similar CI reduction properties, because renewable diesel is chemically similar to conventional diesel and meets industry certification standards (ASTM D975) for diesel fuels, it can be used as a “drop-in” fuel, without a need to blend it with conventional diesel. Thus, switching over to renewable diesel provides the state fleet 20 times the petroleum reduction benefit compared to the state’s traditionally used biodiesel fuel (B5), and reduces GHG emission by over 50 percent compared to conventional diesel fuel.

Petroleum Reduction Progress

Reporting Methodology

In this report, DGS has updated the methodology used to report both biodiesel and E85 fuel consumption. These fuels, which contain a significant blend ratio of petroleum-based fuel, are now reported by separating the individual quantities of the blended fuel types and reporting on them in their respective fuel type categories. During previous reporting periods, there was no clear industry standard for reporting the consumption of blended alternative fuels and resulting petroleum displacement. According to the U.S. General Services Administration, the most common way to measure petroleum displacement is to compare GGEs of each fuel to take into account their different energy densities. Based on that guidance, and in keeping with the intent of AB 236 to “improve the overall state fleet’s use of alternative fuels,” DGS previously used a methodology for reporting fuel consumption that focused on comparing the full GGE amount of alternative fuels used – including blended fuels – to the amount of gasoline and diesel used. Under this methodology, DGS reported alternative fuel such as biodiesel and E85 that are heavily blended with petroleum-based fuels as 100 percent alternative fuel usage.

Recently there has been a growing trend in fuel consumption reporting that calls for breaking down blended fuel by its applicable blend ratios and reporting the broken-down fuels in their respective fuel type categories. For example, a commonly used blended alternative fuel is B5, which is 5 percent pure biodiesel fuel and 95 percent petroleum-based diesel fuel. Previously each gallon of B5 used was reported as alternative fuel consumption. However, with the new reporting methodology, only the 5 percent pure biodiesel is now reported as alternative fuel consumption and the remaining 95 percent is reported as petroleum diesel consumption. Because breaking down the reporting of blended fuels provides a more accurate account of true petroleum consumption and the corresponding GHG emissions, DGS has opted to adopt this new reporting methodology moving forward. To ensure a full understanding of the data being reported in comparison to previous reports, and to be completely transparent in DGS’ reporting methodologies, this report provides petroleum reduction data sets using both the old and new reporting methodologies.

Annual Comparisons 2003-2015

Figure 1 below illustrates the progress made in the state fleet petroleum fuel reduction for 2013, 2014 and 2015 when compared to 2003 petroleum fuel consumption totals. Due to the enactment of AB 2490 (Eggman, Chapter 342, Statutes of 2014)⁷, the District Agriculture

⁷ https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201320140AB2490

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Associations (DAAs) were removed from DGS fleet oversight and fleet reporting requirements effective January 1, 2015. Therefore, beginning in 2015, reported fuel consumption totals no longer include fuel consumed by DAAs, which has averaged approximately 100,000 GGEs annually. Since 2012, the state has continued its progress toward meeting the 20 percent petroleum reduction goal, reducing petroleum consumption by 19.2 percent when compared to the 2003 petroleum consumption baseline. During this three-year time frame, the state reduced its petroleum consumption by 3.8 percent, which equates to a reduction of 1.2 million gallons of petroleum and 24.4 million lbs. of GHG.

Figure 1: Petroleum Reduction Overview

Petroleum Reduction (by Year)					
2013		2014		2015	
2003 Petroleum Consumption (Baseline)	38,559,715	2003 Petroleum Consumption (Baseline)	38,559,715	2003 Petroleum Consumption (Baseline)	38,559,715
2013 Petroleum Consumption	32,416,651	2014 Petroleum Consumption	31,098,674	2015 Petroleum Consumption	31,173,350
Difference (Gallons)	6,143,064	Difference (Gallons)	7,461,041	Difference (Gallons)	7,386,365
% Reduction	15.93%	% Reduction	19.35%	% Reduction	19.16%

Figures 2 and 3 below illustrate four years of state fleet petroleum and alternative fuel consumption using both the new and old reporting methodologies.

Figure 2: Fuel Consumption by Fuel Type (New Reporting Methodology)

Petroleum Fuels	2003	2012	2013	2014	2015
Gasoline*	30,017,477	24,143,121	23,850,483	23,170,952	23,532,603
Diesel	8,542,238	8,683,081	8,566,168	7,927,722	7,640,748
Total Petroleum	38,559,715	32,826,202	32,416,651	31,098,674	31,173,351
Petroleum Percentage of Total Consumption	99.59%	98.33%	98.24%	98.18%	98.30%
Percentage Difference from Previous Year	N/A	-14.87%	-1.25%	-4.07%	0.24%
Percentage Petroleum Reduction from 2003 Level	N/A	-14.87%	-15.93%	-19.35%	-19.16%
Alternative Fuels	2003	2012	2013	2014	2015
Compressed Natural Gas	159,304	196,471	208,890	182,743	181,742
LPG/Propane	0	47,532	61,988	51,559	45,380
E85 Ethanol	0	169,954	143,755	203,876	144,964
Electricity	0	0	561	5,419	6,314
Biodiesel**	0	142,077	164,212	132,743	139,912
Hydrogen	0	0	0	0	0
Liquid Natural Gas	0	569	632	991	0
Renewable Diesel	0	0	0	0	19,609
P-Series	0	0	0	0	0
Total Alternative Fuels	159,304	556,603	580,038	577,332	537,921
Alternative Fuel Percentage of Total Consumption	0.41%	1.67%	1.76%	1.82%	1.70%
Percentage Change from 2003 Level	N/A	249.40%	264.11%	262.41%	237.67%

Source: Voyager and state agencies bulk fuel as reported to DGS.

* Gasoline measured in gallons, all other fuels measured in gasoline gallon equivalents (GGE).

** Biodiesel fuel numbers consist of both B5 and B20 biodiesel; however, B20 represents 0.123 percent of the total biodiesel purchases.

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Figure 3: Fuel Consumption by Fuel Type (Old Reporting Methodology)

Petroleum Fuels	2003	2012	2013	2014	2015
Gasoline*	30,017,477	24,113,129	23,825,114	23,134,974	23,507,021
Diesel	8,542,238	5,983,626	5,454,310	5,416,460	4,991,504
Total Petroleum	38,559,715	30,096,755	29,279,424	28,551,434	28,498,525
Petroleum Percentage of Total Consumption	99.59%	90.16%	88.73%	90.14%	89.87%
Percentage Difference from Previous Year	N/A	-21.95%	-2.72%	-2.49%	-0.19%
Percentage Petroleum Reduction from 2003 Level	N/A	-21.95%	-24.07%	-25.96%	-26.09%
Alternative Fuels	2003	2012	2013	2014	2015
Compressed Natural Gas	159,304	196,471	208,890	182,743	181,742
LPG/Propane	0	47,532	61,988	51,559	45,380
E85 Ethanol	0	199,946	169,124	239,854	170,546
Electricity	0	0	561	5,419	6,314
Biodiesel**	0	2,841,532	3,276,070	2,644,005	2,789,156
Hydrogen	0	0	0	0	0
Liquid Natural Gas	0	569	632	991	0
Renewable Diesel	0	0	0	0	19,609
P-Series	0	0	0	0	0
Total Alternative Fuels	159,304	3,286,050	3,717,265	3,124,571	3,212,747
Alternative Fuel Percentage of Total Consumption	0.41%	9.84%	11.27%	9.86%	10.13%
Percentage Change from 2003 Level	N/A	1962.75%	2233.44%	1861.39%	1916.74%

Source: Voyager and state agencies bulk fuel as reported to DGS.

* Gasoline measured in gallons, all other fuels measured in gasoline gallon equivalents (GGE).

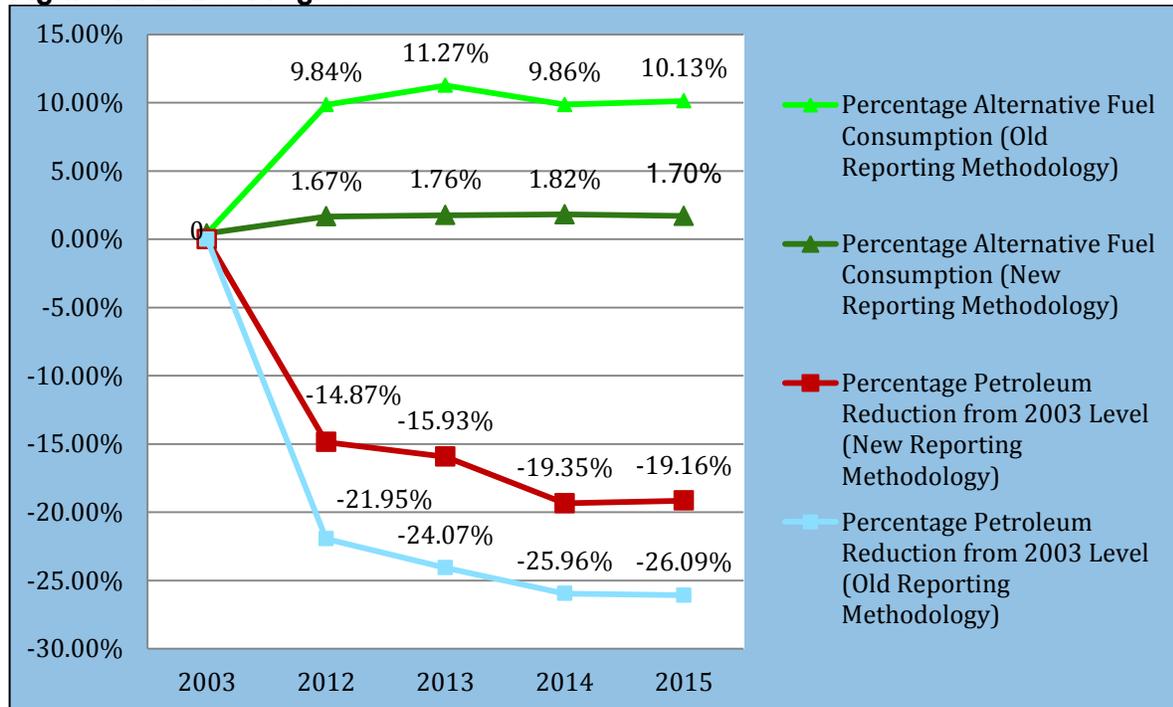
** Biodiesel fuel numbers consist of both B5 and B20 biodiesel; however, B20 represents 0.123 percent of the total biodiesel purchases.

Using the new reporting methodology, petroleum fuel that was blended with E85 and biodiesel fuel, which in 2015 accounted for 2,674,826 GGEs, was separated from the respective alternative fuel categories and added to the proper petroleum fuel totals. In 2015 this shift of fuel consumption usage lowers the reported petroleum reduction from 26.1 percent to 19.2 percent. The largest factor contributing to these changes is the high usage of biodiesel, which represents, on average, 86.6 percent of total alternative fuel consumption. The state primarily uses B5 biodiesel fuel, which is comprised of 5 percent pure biodiesel and 95 percent petroleum-based diesel fuel. As a result, the majority of B5 GGEs were removed from being reported as alternative fuels and are now reported as petroleum-based diesel fuel. Separating the blended fuel types of E85 had a minimal impact on changes to the state's petroleum consumption numbers. E85 only accounts for 5.8 percent of the total alternative fuel usage and the petroleum blend only represents 15 percent of the fuel's total composition.

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Figure 4 illustrates petroleum fuel reduction and alternative fuel adoption progress for both reporting methodologies.

Figure 4: AB 236 Progress



It is important to note that this is the first report that includes electricity consumption in the alternative fuel totals. Beginning in 2013, DGS' Office of Fleet and Asset Management (OFAM) was able to calculate and report electricity usage from battery electric vehicles (BEVs) and plug-in hybrid electric vehicles (PHEVs). As a result of Executive Order (EO) B-16-12⁸, which mandates that 10 percent of all new non-public safety light-duty vehicles be zero-emission vehicles (ZEVs), departments began purchasing ZEVs beginning in fiscal year 2012-13. However, due to a lag between the submission of purchase requests and actual delivery of the vehicle, there is minimal usage reported through 2015. The use of BEVs and PHEVs accounting for the reported electricity consumption has grown from a total of 64 ZEVs in 2013 to a total of 266 ZEVs in 2015. As more ZEVs are received, deployed, and reported on in the state fleet, the consumption of electricity as a state fleet fuel is expected to considerably increase.

In addition to electricity, renewable diesel is another new fuel being used by state fleet vehicles and is now included in this report. Renewable diesel is a relatively new alternative fuel type, which had minimal adoption in 2015. However, in December 2015, DGS issued MM 15-07, which mandates that departments purchase bulk renewable diesel fuel in lieu of biodiesel and conventional petroleum diesel fuels. DGS expects to see a significant increase in the usage of

⁸ <https://www.gov.ca.gov/news.php?id=17472>

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renewable diesel in subsequent years, and a corresponding decrease in petroleum-based diesel fuel consumption.

Revision to the 2012 Fuel Consumption Data

As reported in the 2015 Progress Report, DGS adjusted the 2010 petroleum consumption numbers to reflect updated data entered into the FAMS data warehouse by state departments. Similar to the last report, since the release of the 2015 Progress Report, DGS has received updated fuel data from departments and has updated the 2012 fuel consumption numbers accordingly. These adjustments were made primarily to the gasoline category and had minimal overall impact.

While these adjustments had minimal impact on the overall numbers, in the process of reviewing and updating the report, DGS identified a discrepancy in the 2010, 2011 and 2012 data, which required significant adjustments to the prior report's fuel totals. DGS discovered that fuel assumptions related to commercial car rental fuel purchases and off-contract fuel purchases by state employees using their personal vehicles had been inappropriately applied to the previously reported gasoline consumption totals for 2010, 2011 and 2012. Fuel consumed by the state fleet comes primarily from two sources – state-owned bulk fuel dispensing stations and from commercial fueling outlets. DGS tracks fuel consumption from these two sources by having departments report on bulk fuel consumption and by running reports on commercial fueling through the state's fleet fuel card, Voyager.

When originally developing the 2003 fuel consumption baseline, DGS considered accounting for fuel consumed by state employees who use their personal vehicles or commercial car rentals on official state business. Using a methodology that was based on Travel Expense Claim (TEC) data and an off-contract (personal vehicle use) fuel purchasing percentage assumption of 3 percent, DGS estimated 1.4 million gallons of rental car fuel and 1 million gallons of off-contract fuel were consumed on an annual basis. However, despite developing these fuel consumption estimates, these numbers were never included in the 2003 baseline, as AB 236 is specific in its application to the state fleet, and commercial car rental and personal vehicles do not constitute part of the state fleet.

In completing the 2015 Progress Report, DGS erroneously assumed these estimates had been included in the 2003 baseline and added these fuel consumption estimates to 2010, 2011 and 2012 fuel consumption numbers in previous reports. As part of the data validation process in the preparation of this report, DGS found information showing that commercial rental car and off-contract estimates were never included in the baseline and that the inclusion of these numbers in subsequent years' data falsely inflated petroleum fuel consumption and artificially lowered the state fleet's petroleum consumption reduction progress. While the state does track fuel for leased assets, these assets are largely owned by the state and managed by OFAM to support their long-term and daily leasing program. Assets leased through OFAM are issued a state fleet fuel card for which fuel purchases are captured in FAMS. Conversely, commercial rentals, employee personal vehicles and taxis are not state-owned assets and are primarily for temporary (fewer than 30 days) or intermittent use. Therefore, these vehicles are not considered part of the state fleet and, as such, should not be included as part of AB 236's reporting requirements.

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As a result, in this report DGS has corrected the 2012 petroleum consumption numbers, which were previously reported in the 2015 Progress Report, and will not include off-contract and commercial car rental estimates in subsequent reports. The updates are reflected in Figure 5 below, which shows a comparison of the previously reported and revised 2012 data sets.

Figure 5: 2012 Previously Reported and Updated Fuel Consumption

Petroleum Fuels	2003	2012 (Previously Reported)	2012 Revised
Gasoline	30,017,477	26,497,234	24,143,121
Diesel	8,542,238	5,864,967	8,683,081
Total Petroleum	38,559,715	32,362,201	32,826,202
Petroleum Percentage of Total	99.5%	90.82%	98.33%
Percentage Petroleum Reduction from	NA	-16.07%	-14.87%
Alternative Fuels	2003	2012 (Previously Reported)	2012 Revised
Compressed Natural Gas	159,304	183,157	196,471
LPG/Propane	0	45,927	47,532
E85 Ethanol	0	200,083	169,954
Electricity	0	0	0
Biodiesel	0	2,841,532	142,077
Hydrogen	0	0	0
Liquid Natural Gas	0	0	569
P-Series	0	0	0
Total Alternative Fuels	159,304	3,270,699	556,603
Alternative Fuel Percentage of Total	0.05%	9.18%	1.67%
Percentage Change from 2003	NA	1,953.08%	249.40%

Reporting Procedures and Challenges

Inaccurate Vendor Codes

Inaccurate fuel product coding by retail merchants supplying fuel to state agencies and/or credit card companies that process the sales has inhibited DGS' ability to capture accurate data about E85 fuel being consumed by the state fleet. When reviewing fuel purchase data from merchants, DGS converted known fuel product coding errors to the correct E85 code whenever possible. As an example, in many cases E85 fuel was miscoded as M85 (ethanol), which had to be manually recoded by DGS and included in the E85 category. DGS developed new coding and reconciliation specifications and included those specifications in the new state fuel card provider contract, which was entered into on November 1, 2016. The new contract requires the current vendor to reconcile improper fuel product codes with the merchants prior to sending fuel usage reports, considerably decreasing the number of fuel coding errors and manual reconciliation time.

Completeness and Accuracy of Fleet and Fuel Consumption Data

For an accurate accounting of state fleet petroleum consumption, DGS relies on centralized information and data about the state's fleet. In 2009, DGS deployed the FAMS data warehouse, which required all state agencies to begin reporting their vehicle fleet asset and

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utilization data – including fuel consumption. However, prior to 2016, state agency compliance with these fleet reporting requirements had been inconsistent. In 2016, DGS issued SAM Section 4120.1,⁹ which strengthens compliance with fleet reporting requirements by mandating that all required fleet reporting be complete prior to approval of an agency's fleet acquisition request. More accurate and complete fleet reporting, as a result of this policy, will allow DGS to increase the timeliness and accuracy of future fleet reports, as well as properly forecast – and adjust to – petroleum consumption trends.

An additional challenge in fleet fuel consumption reporting is a lack of an automated data feed from the state's bulk fuel dispensers. Most state-operated fuel dispensers 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. An upgrade to an automated system would eliminate many of the issues associated with receiving accurate and timely bulk fuel usage data from state agencies.

Current and Future Initiatives

With the state fleet on trajectory to meet and exceed the 20 percent petroleum reduction goal by 2016, DGS is committed to continuing its efforts to reduce the state fleet's petroleum consumption and GHG emissions. Specifically, DGS is focused on developing and implementing policy, administrative, and operational actions that will assist the state in meeting the 40 percent GHG emissions reduction goals set forth in EO B-30-15¹⁰ and enacted into law in Senate Bill 32 (Pavley, Chapter 249, Statutes of 2016).¹¹ Below are some examples of actions that DGS is currently taking, or will be taking soon, to meet these expanded GHG emission reduction goals:

1. **Promote ZEV purchases:** In April 2016, DGS partnered with AltCar to host an Alternative Transportation Expo and Ride and Drive at the State Capitol in Sacramento. This event showcased zero-emission vehicles, while promoting and exposing the public and members of the Legislature to the benefits of cleaner transportation technologies. DGS will continue to co-host this annual event, which promotes awareness of the negative impacts of petroleum use on the environment while also educating the public on affordable, cleaner transportation alternatives.
2. **Find new “green” vehicle technologies:** Due to the diversity of the state's fleet and the unique operational demands that these vehicle must meet, many commercially available ZEVs and hybrids, mostly in the sedan category, aren't viable options for departments to use. DGS continues to seek out new types of green vehicles to fill the diverse operational roles of these vehicles. DGS has added hybrid SUVs to the state vehicle contract and, once commercially available, will be adding plug-in hybrid SUVs and minivans to contract.

⁹ https://www.documents.dgs.ca.gov/sam/SamPrint/new/sam_master/sam_master_file/chap4100/4120.1.pdf

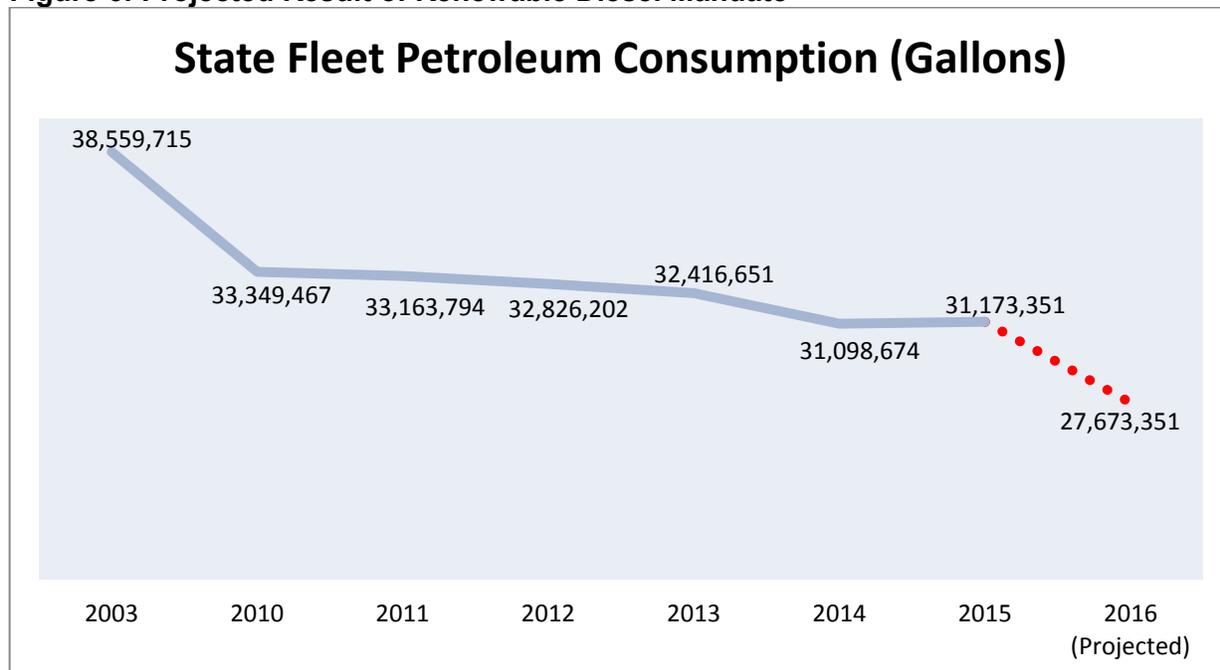
¹⁰ <https://www.gov.ca.gov/news.php?id=18938>

¹¹ https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201520160SB32

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3. **Increase use of renewable diesel:** As a result of the bulk renewable diesel purchasing mandate, as outlined in SAM Section 3627, DGS anticipates the reduction of over 3,500,000 gallons of petroleum-based diesel fuel in 2016. As DGS continues to strengthen compliance measures, it is anticipated that the consumption of petroleum-based diesel fuel will continue to decrease. (See Figure 6 below)

Figure 6: Projected Result of Renewable Diesel Mandate



4. **Lead a nationwide procurement of electric vehicles:** In 2016, DGS in conjunction with CALSTART, the Northeast States for Coordinated Air Use Management, Georgetown Climate Center, Atlas Policy, Ross Strategic, and various Clean Cities Coalitions were awarded a \$1.3 million grant from the U.S. Department of Energy to develop a nationwide aggregated procurement agreement to support the deployment of electric vehicles in public fleets. The purpose of this grant project is to lower the upfront costs associated with electric vehicles and streamline the process by which public fleet procure these vehicles. The grant project team's goal is to achieve this through an aggregated nationwide electric vehicle solicitation, which would ideally offer heavily discounted pricing to all public agencies that wish to purchase off of the contract. If successful, this effort is expected to not only ease some of the challenges with adopting electric vehicles into the state fleet, but also to increase electric vehicle adoption at the local government level, as well.
5. **Adopt a ZEV/hybrid first policy:** In response to Governor Brown's recently released 2016 Zero Emission Vehicle (ZEV) Action Plan,¹² DGS issued MM 16-07,¹³ which

¹² https://www.gov.ca.gov/docs/2016_ZEV_Action_Plan.pdf

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updates and expands upon the EO B-16-12's current ZEV purchasing mandate. The new policy includes the following provisions:

- a) Establishes a ZEV/Hybrid purchasing first priority purchasing structure.
 - b) Increases the ZEV purchasing mandate by 5 percent annually so that 50 percent of annual light-duty fleet purchases are ZEV by 2025.
 - c) Directs state agencies to develop and implement, with the assistance of DGS, a workplace charging plan that will result in EV charging availability at a minimum of 5 percent of workplace parking spaces at state-owned facilities.
 - d) Updates EO B-16-12's ZEV purchasing exemption for public safety vehicles with special performance requirements to ensure that ZEVs are integrated into public safety mobile assets under all feasible circumstances.
6. **Deploy a Green Fleet website to the public:** In May 2017, DGS developed and released a green fleet website (<http://www.green.ca.gov/fleet>) that showcases state agency fleet-related contributions to the state's environmental sustainability goals. Specifically, the website dashboard tracks an agency's annual petroleum reduction, adoption of zero-emission and hybrid vehicles, and their fleet's annual GHG emissions. The dashboard also includes a progress report for each department, showing its contributions to helping the state meet its aggressive petroleum and GHG reduction goals.
7. **Implement a new fleet life cycle policy:** In 2017, DGS will release new fleet life cycle policy that will optimize (by mileage and age) state fleet vehicle replacement standards for light duty and specified medium duty vehicles. The current vehicle replacement standards are based solely on mileage and have left the state with an aging fleet. Not only do older vehicles incur higher maintenance and repair costs, they also tend to have poorer fuel economy, compared to late model vehicles. In 2015, DGS contracted with a consultant and convened a 14-agency work group to develop new vehicle replacement thresholds that would identify the most cost-effective mileage and age thresholds for vehicle replacement. In this cost analysis, the consultant, at the request of DGS, also incorporated a first-in-the-nation "carbon cost" methodology that considers the future fuel economies and GHG reductions when calculating total cost of ownership for fleet vehicles. It is expected that instituting these new replacement standards will not only result in maintenance and fuel cost savings, but as a result of lowering the average age of state fleet vehicles, will also help significantly reduce petroleum consumption and GHG emissions.
8. **Lower the monthly and daily fleet rate for fuel efficient vehicles:** To promote the adoption of more fuel efficient vehicles, DGS is changing its rate structure to reduce and eliminate the cost difference between vehicles that are rented and leased through DGS. By aligning the ZEV and hybrid vehicle rates with their internal combustion engine counterparts, DGS hopes to eliminate the cost argument against acquiring ZEVs and hybrids.
9. **Promote the installation of EV charging infrastructure:** To support the increase in

¹³ http://www.documents.dgs.ca.gov/osp/sam/mmemos/MM16_07.pdf

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plug-in electric vehicles, DGS is aggressively promoting the installation of EV charging infrastructure. Departments will now be required to develop comprehensive plans for the installation of EV charging infrastructure needed to support the fleet vehicles they are requesting on annual fleet acquisition plans.

10. **Continue the State Equipment Council (SEC) workgroup:** DGS continues to organize and lead the SEC, a cooperative body of fleet managers and program administrators from executive branch state agencies, on a variety of new fleet-related policies that are intended to:
 - a) Provide better controls over the state fleet.
 - b) Optimize the use of publicly accessible alternative fuel stations.
 - c) Develop a network of electric charging stations to support the electric vehicles entering the state fleet.
 - d) Provide more accurate and timely reporting of state fleet metrics.

Conclusion

Since the enactment of AB 236 in 2007, DGS and state agency 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*, DGS has implemented numerous policies and procedures that, with significant cooperation from state agencies, have helped reduce petroleum consumption by 19.2 percent, when compared to the 2003 baseline.

The initial reduction in petroleum consumption from 2010-2013 was primarily the result of Governor Brown's fleet reduction Executive Order (EO B-2-11), which reduced the state fleet by 6,893 assets. Since 2013, DGS has taken numerous policy, administrative, and operational actions to increase the fuel efficiency of the state fleet; limit unnecessary vehicle additions; and increase the use of alternative fuels. In 2013, 2014 and 2015, through the issuance of fleet purchasing policies and increased operational oversight, the state added 255 ZEVs and 823 hybrid electric vehicles (hybrid). These new vehicles, combined with previous ZEV and hybrid purchases, equated to a total of 266 ZEVs and 1,499 hybrids in 2015. DGS also furthered petroleum reduction efforts by implementing better fleet management practices. These practices focused on identifying and disposing of older, non-cost-effective fleet assets; strengthening fleet reporting requirements; and implementing new fleet vehicle fuel efficiency standards. As a result of these initiatives and increased ZEV/hybrid vehicle adoption during 2014 and 2015, petroleum consumption was reduced to 19.2 percent, when compared to the 2003 baseline, and GHG emissions decreased by 18.1 million lbs.

As a result of the renewable diesel purchasing mandate, as outlined in SAM Section 3627, DGS expects the state to have met and exceeded AB 236's 20 percent petroleum reduction goal in 2016. Despite the state's success in meeting these petroleum reduction goals four years prior to the target deadline, DGS is committed to continuing efforts to further reduce the state fleet's petroleum consumption. In accordance with Governor Brown's vision to achieve a 40 percent reduction in GHG emissions (from 1990 levels) and a 50 percent reduction in transportation petroleum fuel usage (from 2015 levels) by 2030, DGS will continue to promote policies and implement initiatives that contribute toward meeting these difficult but attainable

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goals. While the state fleet makes up only a small portion of the vehicles on California's roadways, it plays an important role in the state's efforts by leading the charge as an early adopter of zero-emission vehicle technology and as an aggressive implementer of fleet sustainability policies. Governor Brown's aggressive GHG reduction goals underscore the importance of the state fleet's leadership role and highlights the need for more to be done, with significant focus on increased penetration of ZEVs in all vehicle classes of the state fleet and further adoption of alternative fuel policies.