



COLORADO
Division of Central Services
Department of Personnel
& Administration

State Fleet Management
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To: Senate Transportation Committee & the House Transportation and Energy Committee and the Joint Budget Committee

From: June Taylor, Executive Director, DPA

Subject: **Fiscal Year 2016 Vehicle Acquisition Report**

This report is being sent to the Transportation Committee of the Senate and the Transportation and Energy Committee of the House of Representatives and the Joint Budget Committee pursuant to Section 24-30-1104(2) (c) (II), C.R.S., which states: By January 1, 2008, the executive director shall adopt a policy to significantly increase the utilization of alternative fuels and that establishes increasing utilization objectives for each following year.

SUMMARY OF FISCAL YEAR 2016 VEHICLE ACQUISITIONS

In Fiscal Year 2015-16 the Department was able to place orders for (48) compressed natural gas (CNG) vehicles within previously approved budgeted appropriations. This represented 7.2% of all vehicle orders as of 10/19/16, and 10.19% of all non CDPS CSP orders.

The Department's revised goal was to order (257) CNG vehicles. Due to several vehicle platforms (Sedan, Mini-van, ½, and 1 ton vans) not passing the 10 percent methodology there was a significant reduction in the CNG purchasing potential. The state was able to make a significant impact by securing \$336,925.00 in Regional Air Quality Council managed grant funding. With this offset to the vehicle purchase price and identification of the agencies identification of CNG vehicle applications, continued CNG purchases were viable. Without these resources CNG would not have been a viable option on several vehicle platforms. Industry indicators point to CNG displacing approximately 1% of the vehicles within light duty market place in the coming year. State Fleet Management (SFM) collaborates with each agency on CNG purchases to ensure the vehicle can perform adequately in the field which is critical to successful implementation of any AFV with limited fueling options.

The Department was able to place orders for (128) E85 Flexible Fuel Vehicles (FFV) subject to availability and because fuels cost neutrality compared to the dedicated petroleum vehicle was less than 10 percent at a cost of \$0 to \$3870, with an average of \$462 per vehicle. This represented 19.25% of all vehicle orders.



This purchase cycle demonstrated a resurgence of the hybrid vehicle, this year (148) were ordered. The comparable life-cycle cost on the models ordered was less than 10 percent compared to their gasoline equivalents life-cycle. This represented 22.26% of all vehicle orders. As Hybrid vehicle platforms have become more common place, their associated cost has decreased and their on-board technology has become more efficient. The industry has demonstrated a focus on this pairing of electrification and the internal combustion engine as an efficient means to reduce fuel consumption.

Building on last year's original Plug-in Hybrid Vehicle (PHEV) purchases the state has indentified (10) more PHEV's representing 1.65% of fleet purchases. These vehicles are currently being classified as a subset of the EV classification for reporting purposes. PHEV are a key to capitalization on the expansion of the Electric Vehicle(EV) charging infrastructure.

FY 2015-16 demonstrated the first purchase of a 100% Electric Vehicle (EV). The vehicle will be housed for use at the DPA Motor Pool. With the agencies award of grant funding the vehicle platform did pass the 10% mythology. This location was chosen for the current electric vehicle infrastructure located at the DPA facility and the centralized motor pool location, allowing access by a large user group.

The Department ordered (330) dedicated petroleum vehicles this year that represented 49.6% of all vehicle orders, with CDPS ordering (178) of those vehicles. Currently there are no CNG available models for patrol vehicles from the manufacturer. The remaining vehicle orders had no CNG options available from the OEM.

In addition the Department ordered (44) diesel vehicles for various agencies. This represented 6.6% of all vehicle orders.

DPA PROCEDURES & POLICIES ON ORDERING NEW VEHICLES

State Fleet Management's current vehicle ordering process is focused by Senate Bill 09-092, Senate Bill 13-070, and the Governor's focus on alternative fueled vehicles, emphasizing a menu approach for the appropriate vehicle selection.

Senate Bill 09-092 and S.B. 13-070 require that the state purchase natural gas capable vehicles whenever the incremental cost for the CNG vehicle is within 10% of the life cycle cost of the regular gasoline alternative. As a result, purchasing "Compressed Natural Gas" (CNG) vehicles will be the first option when replacing older inefficient vehicles wherever practicable. This will



allow the state to take advantage of Colorado's vast reserves of natural gas, reducing our dependence on petroleum, creating new jobs, and reducing our carbon footprint. Because nearly all of the CNG models available can be purchased as dual fuel vehicles (i.e. they can utilize either CNG or gasoline), we have much greater flexibility in the placement of these vehicles.

SFM will need the cooperation and collaboration of every agency to successfully meet the requirements of S.B. 09-092, S.B. 13-070 and the Governor's expectations as we replace vehicles in FY 2016-17 and beyond. In the new vehicle ordering packet for agencies, specific instructions were included to guide them through the process, so the most effective vehicle can be purchased and put into service. AFV models must be reviewed and considered as the first level of choice during the vehicle selection processes. If it is determined that the AFV models available be to purchased CNG, hybrid, or plug-in electric hybrid vehicle, or another type of alternative fueled vehicle such as E85 flexible fueled vehicles (FFV), Propane will not meet the functional requirements of the department, the accompanying vehicle options will be to purchase a hybrid, or plug-in electric hybrid vehicle (if available) or another type of alternative fueled vehicle such as E85 flexible fueled vehicles (FFV). The last option will be to purchase a gasoline vehicle. If the available proposed CNG model will not work for the department then an additional form "Non-CNG Purchase Justification Form" must be completed and signed off on by the Executive Director of each agency.

AVAILABILITY OF CNG STATEWIDE

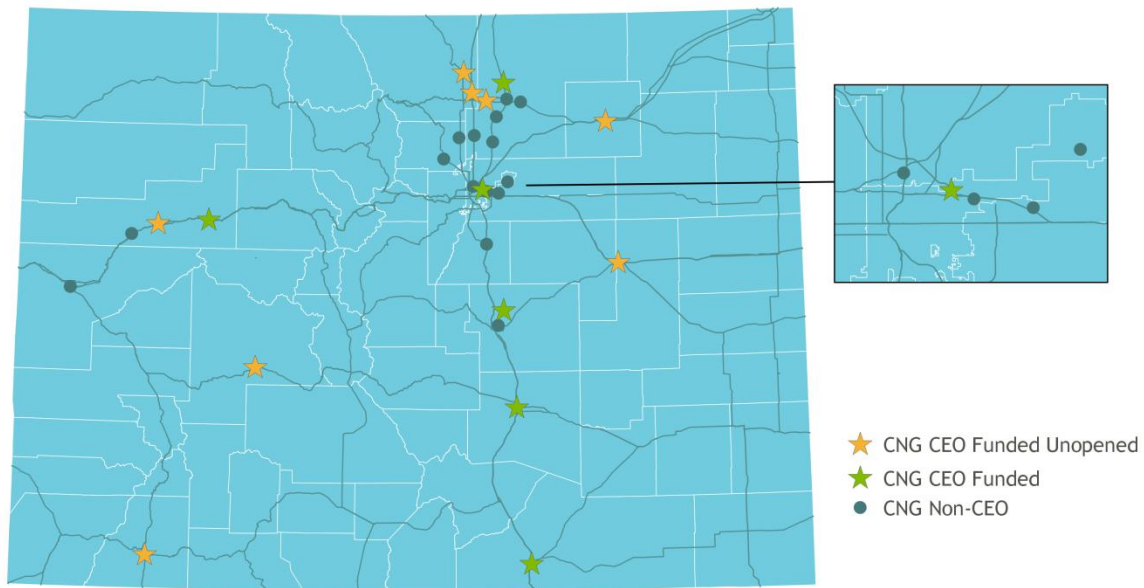
As of October 26, 2016, there are 21 public access CNG fuel sites in operation statewide, and several more are under construction. The Colorado Energy Office through the ALT Fuels Colorado grant program has awarded 14 stations across the state. These stations are operational in Glenwood Springs, Pueblo, and Trinidad, Colorado Springs, Commerce City, and Eaton. Eight additional stations will be completed within a year in Fort Collins, Greeley, Loveland, Rifle, Gunnison, Durango, Limon, and Fort Morgan. Over the next 18 months, the Energy Office will work in tandem with industry fleets and fuel providers to develop additional CNG stations at key locations along major transportation corridors throughout the state, in turn completing an intrastate network for CNG travel.

In 2015, the CEO commissioned the Colorado State Fleet Opportunity Assessment, a study to assess the best options for AFV deployment and the use of telematics and data collection in the State fleet. Fleet managers from several State agencies including CDOT and DPA advised on the methodology and results of the study. The outcome of this report indicated high potential for further deployment of dedicated CNG vehicles as well as bi-fuel CNG vehicles, which hold strong potential for increased deployment due to their flexibility, range, and potential for



substantial increases in fuel economy in hybrid-electric scenarios. These findings can be used to guide SFM in future vehicle purchases and acquisition efforts.

CNG Fueling Stations



Data from AFDC

Not listed are approximately 10 private access CNG fuel sites, the state has not been able to secure agreements to use these facilities due to liability concerns in addition to being located in locked, secured areas on private property. As an exception, State Fleet Management has been able to engage with the City and County of Denver and is utilizing its private CNG fueling facilities.

INFRASTRUCTURE STRATEGY

Governor Hickenlooper and Governor Fallin of Oklahoma worked together to develop the unprecedented, bi-partisan, multi-state memorandum of understanding to aggregate 22 states' fleet purchases to promote CNG vehicle technology, which will move the country closer to



energy independence while increasing access to a low-cost source of energy with environmental benefits. The goal was to increase demand for CNG vehicles, in turn driving auto makers to make available more models capable of using CNG at a reduced cost due to the increased volumes. Furthermore, local governments and private fleets followed the Governors' example, signing onto a fleet MOU committing to support CNG throughout the state. As a major natural gas producer, Colorado benefits from these initiatives by supporting jobs, reducing emissions, and providing long term, low cost fuel for consumers and fleets.

The SFM works closely with the Colorado Energy Office, Department of Energy's Clean Cities Coalitions, Regional Air Quality Council (RAQC), National Renewable Energy Laboratory (NREL), political subdivisions, and representatives from AFV suppliers to discuss best practices and strategies to build AFV infrastructure statewide. Since AFV fuel sites require a baseline commitment from fleets in order to legitimize operations, it is imperative to the AFV industry that there are adequate concentrations of AFV vehicles in place at these fueling sites to guarantee a sustainable alternative fuels market at the local level. Colorado's fleet sets an example by purchasing natural gas vehicles for a number of local governments, private fleets, and other states thereby building demand for AFV far beyond state fleet vehicles.

In order to build demand for all AFV fueling infrastructure, the State and other stakeholders must purchase AFV vehicles to demonstrate to fuel/energy suppliers that we have vehicles in place capable of creating demand. Working closely with the departments and the Colorado Energy Office, SFM will provide thorough guidance on the placement of these vehicles, in tandem with other public and private fleets, so potential fuel volumes may be combined in support of Colorado's alternative fuels market.

EXEMPTIONS

SFM is required to purchase an alternative fuel vehicle if either the increased base cost of such vehicle or the increased life-cycle cost of such vehicle is not more than ten percent over the cost of a comparable dedicated petroleum fuel vehicle. The executive director shall adopt a policy to allow some vehicles to be exempted from this requirement. Current exemptions include:

- Colorado Department of Public Safety law enforcement "patrol", "undercover", and "specialized" vehicles like crime scene labs and Haz Mat vehicles are exempted from this requirement until such time CNG vehicles are available and proven reliable and certified. However, CDPS is required to purchase CNG vehicles wherever practicable except for the exemptions listed above.



- Non-CDPS Law enforcement “certified patrol” vehicles used by state agencies are exempt from this requirement until such time CNG vehicles are available and proven reliable and certified for this function. At this time this will include Chevy Police Caprice and Impala models, Ford Police Interceptors, Police Dodge Chargers, Chevy Police Tahoes, Ford Police Expedition and Interceptor Utility, and Police Dodge Durango’s.
- This also covers vehicles that have specialized equipment affixed to the vehicle making it less suitable for general transportation. These vehicles are essentially a “tool on wheels” or “mobile shop” that would be difficult to accommodate CNG fuel tanks and be certified by the OEM. Examples include a drilling unit, water tanks, lab/research equipment, plumbing or telecommunications equipment, and patient and prisoner transport vehicles.
- Other unknown potential exemptions will be considered on a case by case basis only.

The table below identifies the number of acquisitions by fuel type configuration or hybrid vehicles by department for FY16.



FY 2015-16 ACQUISITIONS BY FUEL TYPE / HYBRID BY DEPARTMENT

Dept	Fuel Type / Hybrid						Total
	CNG	E85	Diesel	Hybrid	Electric	GAS	
CDPS	0	13	5	3	0	173	194
DOAG	1	2	0	2	0	4	9
DOC	1	24	8	57	0	33	123
DOE	0	0	0	0	0	0	0
CDPHE	0	0	0	10	2	2	14
DOHE	0	12	3	2	0	22	39
DOHS	3	12	0	9	0	9	33
DOL	0	0	0	2	0	1	3
DOLA	0	0	0	6	0	0	6
DOLE	0	0	0	5	0	0	5
DOMA	0	0	0	0	0	1	1
DONR	9	54	25	1	0	16	105
DOR	0	4	0	14	0	7	25
DORA	0	3	0	0	0	1	4
DOT	33	4	0	24	7	16	84
GOV	0	0	2	0	0	0	2
DPA	1	0	1	1	2	0	5
JUD	0	0	0	12	0	1	13
Totals =	48	128	44	148	11	286	665
	7.22%	19.25%	6.62%	22.26%	1.65%	43.01%	

CNG & AFV VEHICLE ACQUISITIONS – FY 2007-08 to FY 2015-16

Since January of 2008 through 2012 only one (1) CNG vehicle was purchased because only two OEM dedicated CNG vehicles were available from model year 2006 to 2011. This limited the State’s ability to purchase CNG vehicles during this time. Because of budget constraints largely in part to the economic crash in FY 2008-09, the State only approved vehicles to be replaced in FY 2010-11 and FY 2011-12 if they had an impact on life, health, or safety. Most of these vehicles were for the Department of Public Safety, State Patrol Division. CNG and AFV acquisitions resumed in FY 2012-13 with the purchase of 81 CNG vehicles, 153 CNG vehicles in



FY 2013-14, 35 CNG vehicles in FY 2014-15, 48 CNG in FY2015-16. See table below for a summary of vehicle acquisitions from FY 2007-08 to FY 2015-16.

The SFM Program was able to purchase a total of 1,742 alternative fueled vehicles capable of using E85 and regular gasoline from FY 2007-08 to FY 2015-16. Historically, E85 vehicles have always been less than 10% of the gasoline equivalent, and in some cases this option has been standard equipment at no additional charge. These vehicles are also commonly referred to as “flexible fuel vehicles,” or FFV’s.

As stated above the industry has dedicated a significant effort to the expansion of vehicle electrification. That has lead to more applications and a broader spectrum of choices for implementation. It has also allowed for the economies of scale to be better realized. This has allowed for purchases of 2390 Hybrid purchases from FY2007-08 to FY2015-16. The PHEV and EV platforms are showing continued growth with a total of 13 vehicles between FY 2007-08 and FY2015-16.

SUMMARY OF VEHICLE ACQUISITIONS – FY 2007-08 to FY 2015-16

Fiscal Year	Total Acquisitions	CNG	E85	Hybrid	Electric	Diesel	Non AFV Acquisitions
2008	654	0	284	370	0	370	370
2009	895	0	303	592	0	592	592
2010	551	0	245	306	0	306	306
2011	241	0	98	143	0	143	143
2012	317	1	113	203	2	203	203
2013	566	81	220	265	0	265	265
2014	680	153	233	294	0	294	294
2015	721	35	246	69	0	40	331
2016	665	48	128	148	11	44	286
Totals	5,290	318	1,870	2,390	13	2,257	2,790

