A Review of

Alternative Fuel and Advanced Vehicle Technology Incentives, Policies, & Programs

in
Georgia, Kentucky, North Carolina, South Carolina, Tennessee, and Virginia

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Executive Summary

A review of alternative fuel and advanced vehicle technology policies in Georgia, Kentucky, North Carolina, South Carolina, Tennessee and Virginia was conducted by the NC Solar Center as part of the U.S. Department of Energy supported Alternative Fuel Implementation Team Project. Most of the policies reviewed are featured in the U.S. Department of Energy’s Alternative Fuel Data Center (AFDC). Clean Cities coordinators in each of the profiled states conducted additional research and reached out to appropriate parties to assess the effectiveness of various laws, policies and programs. A summary of the incentives deemed to be effective, grouped by type, is shown below.

Biofuels: Tax credits to support biofuels production helped Kentucky’s biodiesel producers increase output to reach their peak capacity, while grant funding to support ethanol fueling infrastructure installations is responsible for almost half of the E85 (85% ethanol/15% gasoline) stations currently in operation. South Carolina’s biofuels retailer incentive payment program (where the value of the payment is passed on to consumers in the form of reduced price) was successful in boosting their biofuels market until that incentive was allowed to expire. Because biodiesel and E85 ethanol can cost more than gasoline or diesel, biofuel use goals and requirements also support increased biofuels use, as has been seen in North Carolina and Virginia.

Electric Vehicles (EVs): One of the most often noted barriers to broader EV adoption in this region and across the country is the up-front cost to purchase the vehicle. State tax credits or rebates that add to the federal incentives bring the purchase cost of electric vehicles close enough to the cost of conventional vehicles for consumers to feel more comfortable with this relatively new technology. Two of the top three states for the number of electric vehicle charging stations installed (Georgia and Tennessee) have state tax credits/rebates for purchasing electric vehicles that add to the current up to $7,500 federal credit.¹

- Georgia instituted two additional tax credits that are used to offset electric vehicle purchase costs, and has since seen a significant increase in electric vehicle purchases. This incentive, along with incentives that facilitate more widespread installation of electric vehicle charging stations, such as Georgia’s alternative fuel vehicle tax credit, should be strongly considered by those interested in expanding electric vehicle ownership. From 2010 to 2013 there was a 612% increase in the number of low- and zero-emission tax credit certificates issued in Georgia, a strong indicator that this incentive has been highly successful in encouraging and/or facilitating electric, hybrid and alternative fuel vehicle ownership.
- Tennessee instituted a limited time electric vehicle rebate program as part of their EV Project, in which 700 rebates were provided, quickly boosting EV ownership in the state.

General incentives: Fully funded grant and revolving loan programs that support alternative fuel and vehicle implementation have demonstrated results in expanding clean transportation markets. Bundled, targeted tax credit incentives have also shown promise.

- Virginia put in place grant and loan programs that support vehicle conversions and fueling infrastructure installation by municipal, county and commonwealth agencies. These programs, while relatively new, have already been very successful in increasing the availability of propane and natural gas refueling infrastructure and deployment of vehicles capable of running on these fuels.
- North Carolina has a revolving fund based on the sale of credits that rose out of the alternative fuel use tied to the vehicle acquisition requirement under the Federal 1992 Energy Policy Act – this fund is responsible for major expansion of E85 flex fuel vehicle purchases and E85 refueling infrastructure by the NC Departments of Administration and Transportation respectively.

¹ In March 2014 Georgia’s legislature repealed their electric vehicle tax credit, effective April 1, 2014.
• The North Carolina Solar Center operates the NC Department of Transportation supported Clean Fuel Advanced Technology (CFAT) program, with federal Congestion Mitigation Air Quality funds. The CFAT project includes a request for proposal process to support projects that reduce transportation-related emissions in select counties in North Carolina. The CFAT program, now in its seventh year, helps offset the incremental costs of AFV purchases/upfits and total cost of alternative fuel station installation. The CFAT project is increasing alternative fuel/vehicle use by public and private fleets, and is also significantly leveraging federal funds: for each grant dollar allocated in the most recent round of funding over $1.30 in cost share contribution was committed by grantees when only a 20% cost share is required.

• Kentucky's bundled tax refund/credit (sales and use tax refund, severance tax incentives, corporate income tax credits, and wage assessment incentives) for companies that install, upgrade or expand alternative fuel stations was amended in 2013 to include CNG and LPG, and though this multi-faceted incentive is only recently expanded, early feedback suggests that it will facilitate increased alternative fuel and vehicle use.

Total fuel use reduction: Idle reduction technologies, eco-driving, and providing funding support for vehicle up-fits that reduce idling has helped fleets cut fuel costs and improve air quality. Programs like these can be even more effective when paired with baseline tracking and fuel use reduction requirements in a ‘carrot and stick’ approach.

• In addition to vehicles and fuel stations, North Carolina’s CFAT project also supports the purchase of idle reduction technologies that reduce total fuel use.

• North Carolina also has an Idle Reduction Rebate administered by the state Division of Air Quality program that has issued more than 300 rebates for installation of idle reduction technology on vehicles. This program is in high demand, and is highly effective at addressing the excessive and wasteful fuel use (and emissions generation) that occurs during mandatory rest periods for truck drivers.

• Virginia requires that all commonwealth-approved drivers training must also include fuel efficient driving instruction. Results of this particular requirement are not tracked, but hands on eco-driving trainings conducted by the NC Solar Center have demonstrated reduced fuel use.

Local and organizational incentives: While state-level incentives are the primary target of this report, it is also important to recognize incentives instituted by municipalities and/or employers. Examples of these types of incentives include: installing electric vehicle charging stations, reimbursing employees for vehicle purchases, establishing employee recognition programs rewarding reductions in petroleum use, and incorporating staff vehicles that run on alternative fuels.

• Burt’s Bees offers $150 annually towards the purchase or lease of fuel efficient or fuel free vehicles or for the purchase of alternative fuels.

• North Carolina based Celgard offers a $1,800 employee incentive to purchase a Chevy Volt and Nissan Leaf that will extend into 2014.

• Bank of America will reimburse $3000 for purchase a hybrid, EV or CNG vehicle.

• City of Charlottesville, Virginia has developed a small grant program to spur installation of electric vehicle charging in the City

Company and local government employees are also vehicle consumers, so giving them what is essentially a long-term test drive experience helps demystify the technology and highlight the benefits, which can lead to electric vehicle adoption among staff. For example both the Centralina and Triangle J Council of Governments, home to Centralina Clean Fuels and Triangle Clean Cities coalitions, have
purchased hybrid electric vehicles as staff cars. The same type of extended test drive experience can increase comfort level among staff with fleet vehicles running on propane, natural gas, and biofuels.

Counter-Incentives: Policies that could hamper alternative fuel and advanced vehicle adoption were also reviewed as part of report preparation. Most of these counter-incentives affect plug-in electric vehicles, and are aimed at addressing lost revenue for roads and highway maintenance. While it is important to resolve the issue of declining revenue for roads maintenance, these approaches make it more difficult for alternative fuels/vehicles to take hold in the marketplace, and are often disproportionate to the amount of revenue lost as a result of alternative fuel vehicle use.

- Vehicle registration taxes: North Carolina, Virginia and Tennessee have instituted special vehicle registration taxes that apply to electric and/or propane vehicles.
- Fuels tax: Tennessee and Virginia have also mandated a special fuels tax for alternative fuels, in an effort to recoup some of the revenue that is lost when vehicles switch to alternative fuels.

Tracking and evaluation: While most states do not actively track or evaluate the effects of transportation-related incentives, the need to do so is clear, as some of the most effective incentives highlighted here and in the full report below were threatened, reversed, or allowed to lapse during the preparation of this report. Being prepared with statistics on the use and value of alternative fuel and advanced vehicle technology incentives helps ensure that those which are useful remain in full effect for as long as they are needed.

The full report, organized by state, includes a short description of selected policies featured in the AFDC’s State Laws and Incentives section, with more detailed information on the implementation and effectiveness contributed by Clean Cities coordinators and other data sources in each of the participating states (shown in italics below each description). The table below summarizes the incentives available in each state that participated in the preparation of this report, with a checkmark for each incentive that relates to the specified type.

<table>
<thead>
<tr>
<th>Incentive Type</th>
<th>GA</th>
<th>KY</th>
<th>NC</th>
<th>SC</th>
<th>TN</th>
<th>VA</th>
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<tbody>
<tr>
<td>Vehicle Tax Credit and/or Rebate</td>
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<td>✓</td>
<td>✓</td>
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<tr>
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<td>✓</td>
<td>✓</td>
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<td>✓</td>
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<tr>
<td>Other Exemption (e.g. HOV lane, emissions testing, bond filing, fuel station regulation, vehicle weight limit)</td>
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<td>✓</td>
<td>✓</td>
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</tr>
<tr>
<td>Fuel and/or Vehicle Promotion Program (including AFV/fuel user grants, loans, AFV or alt fuel preference statements, research and development funding)</td>
<td>✓</td>
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<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
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<td>Technical Assistance Program</td>
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<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>State Requirement (e.g. AFV acquisition requirement, alt fuel use, fuel-efficient driver training, etc.)</td>
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<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>

= incentive remains in place but is no longer granted, or was allowed to expire during the preparation of this report
Introduction

The up-front cost of fleet conversion and relative lack of comfort with new or unfamiliar technologies are two major barriers hindering more widespread adoption of alternative fuels and advanced vehicle technologies by fleets and individual consumers. For producers and technology providers to thrive, they need more customers willing to pay that up-front cost and try out alternative fuels. Various types of incentives can help offset some the up-front cost, while laws and regulations can serve a role in encouraging fleets to familiarize themselves with alternative fuels and advanced vehicle technologies.

This document is a review of alternative fuel and related transportation policies in Georgia, Kentucky, North Carolina, South Carolina, Tennessee and Virginia, conducted as part of the U.S. Department of Energy sponsored Alternative Fuel Implementation Team Project. The purpose of this report is to share information about the effectiveness of monetary and non-monetary policies and programs with regards to increasing deployment of alternative fuel and advanced vehicle technologies. The intended audience is policy and decision makers who are interested in better understanding existing policies, and in establishing future legislation and other related incentives that promote and facilitate fuel diversity and conservation.

Several states do not have any mechanism to actively track the results of incentives, policies and programs, which make it challenging to evaluate their effectiveness for the purpose of this report. This deficit also hinders the ability to advocate for retention or expansion of such incentives, since quantifiable results are often requested by those making and voting on policy and budget provisions. Regular (annual) tracking and evaluation of clean transportation related policies is strongly recommended wherever possible. The costs of incentives and policies should then be correlated with expanding economic activity and subsequent industry development that may have occurred as a result of these incentives.

Economic incentives coupled with technology use requirements have proven to be strong drivers in encouraging accelerated adoption of alternative technologies. While not directly related to alternative transportation fuel, the surge of the North Carolina to the #2 spot in the U.S. for solar installations is a case in point. North Carolina has both a Renewable Portfolio Standard, requiring utility use of renewable energy as well as state tax credits for individual and business installation of solar. This surge can be repeated in the alternative fuels and advanced vehicle technologies sectors with the appropriate mix of incentives and requirements.

There is significant variation among the states reviewed in the preparedness for and interest in the different alternative fuels, resulting in similar variation in the types of incentives in each state and in the effectiveness of those incentives. The following report includes a summary of incentives that have shown, either anecdotaly or quantitatively, to support and/or encourage the use of alternative fuels. It is not intended to be a complete review of every policy associated with alternative fuel production/use.

Primary descriptions of each incentive are taken from the U.S. DOE Alternative Fuels Data Center website unless otherwise noted, with data and evaluation from report authors and contributors shown in italics below each applicable incentive.
To skip to specific sections, click on the hyperlinks below:

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- [Counter-Incentives to Alternative Fuel Use](#)

**Georgia**


**Alternative Fuel and Advanced Vehicle Job Creation Tax Credit**

A business that manufactures alternative energy products for use in battery, biofuel, and electric vehicle enterprises may claim an annual tax credit for five years. The amount of the tax credit is based on the number of eligible new full-time employee jobs. Qualified entities must be defined as business enterprises, which do not include retail businesses. Credit amounts differ depending on how the county in which the business is located ranks based on unemployment rates and income levels. Other conditions apply. (Reference Georgia Code 48-7-40)

**Alternative Fuel Vehicle (AFV) Tax Credit**

An income tax credit is available to individuals who purchase or lease a new dedicated AFV or convert a vehicle to operate solely on an alternative fuel. The amount of the tax credit is 10% of the vehicle cost, up to $2,500. Qualified vehicles must meet emissions standards defined by the Georgia Board of Natural Resources. Eligible alternative fuels include natural gas, propane, hydrogen, coal-derived liquid fuels, fuels other than alcohol derived from biological materials, and electricity. Any portion of the credit not used in the year the AFV is purchased or converted may be carried over for up to five years. This incentive does not apply to hybrid electric vehicles. (Reference Georgia Code 48-7-40.16)

The AFV Tax Credit has been on the books since 1999, when there were no commercially available vehicles that were eligible. From 1999-2001 there were approximately 30 credits issued to Georgia Power for vehicle conversions, and then nothing reported again until 2009. It is important to note that commercial availability of eligible AFVs has been extremely limited until very recently. Because the AFV and Zero Emission Vehicle (ZEV) Tax Credits are part of the same code, issued credits were not
recorded separately for some years. A more detailed accounting of credits issued for AFVs and ZEVs is shown under the ZEV section below.

Zero Emission Vehicle (ZEV) Tax Credit
An income tax credit is available to individuals who purchase or lease a new ZEV. The amount of the tax credit is 20% of the vehicle cost, up to $5,000. For the purpose of this credit, a ZEV is defined as a motor vehicle that has zero tailpipe and evaporative emissions, including a pure electric vehicle. Low-speed vehicles do not qualify for this credit. Any portion of the credit not used in the year the ZEV is purchased or leased may be carried over for up to five years. For more information, see the Alternative Fuels and Tax Credits website. (Reference Georgia Code 48-7-40.16)

The table below shows the number of tax credits issued for Alternative Fuel Vehicles (also called Low Emission Vehicles, or LEVs) and Zero Emission Vehicles from 2010 through 2013*. In this time period there has been a 700% increase in the number of LEV/ZEV tax credit certificates issued, the vast majority being for ZEVs. This suggests that the ZEV incentive in particular has been highly successful at promoting and/or facilitating plug-in electric vehicle ownership in Georgia as more makes and models have become available in the marketplace.

<table>
<thead>
<tr>
<th>Year</th>
<th>#AFV (LEV) credits</th>
<th>#ZEV credits</th>
<th># Total</th>
</tr>
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<tbody>
<tr>
<td>2010</td>
<td>0</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>2011</td>
<td>?</td>
<td>85</td>
<td>~85</td>
</tr>
<tr>
<td>2012</td>
<td>1</td>
<td>128</td>
<td>129</td>
</tr>
<tr>
<td>2013</td>
<td>35*</td>
<td>1358*</td>
<td>1393*</td>
</tr>
<tr>
<td>TOTAL</td>
<td>~36*</td>
<td>1573*</td>
<td>~1609*</td>
</tr>
</tbody>
</table>

Table 1. Data sources: Georgia Department of Natural Resources and Atlanta Clean Cities Coalition.*The number of credits issued for 2013 is likely to rise significantly, as tax payers continue to file requests for that tax year (as of early 2014 there were over 6000 battery electric vehicles registered in the state of Georgia).

Electric Vehicle Supply Equipment (EVSE) Tax Credit
An eligible business enterprise may claim an income tax credit for the purchase or lease of qualified EVSE provided that the EVSE is located in the state and accessible to the public. The amount of the credit is 10% of the cost of the EVSE, up to $2,500. For more information, see the Alternative Fuels and Tax Credits website. (Reference Georgia Code 48-7-40.16)

According to the Alternative Fuel Data Center, as of December 2013 there were 206 electric vehicle charging stations (165 public, 41 private) in Georgia. Of those, more than 120 are located at businesses that may have been eligible to claim an income tax credit for purchasing the charging station (it is unknown how many of these have actually been claimed).

Idle Reduction Weight Exemption
Any motor vehicle equipped with idle reduction technology may exceed the state gross, axle, and tandem weight limits by up to 400 pounds to account for the weight of the technology. To be eligible for

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2 In March 2014 Georgia’s legislature attempted to repeal their state electric vehicle tax credit through a proposed amendment to Code Section 48-7-40.16 (http://www.legis.ga.gov/Legislation/20132014/143495.pdf), but ran out of time before final voting could take place.
the weight exemption, the vehicle operator must be able to provide written proof or certification of the weight of the idle reduction technology and demonstrate or certify that the technology is fully functional at all times. (Reference Georgia Code 32-6-27)

Alternative Fuels Production Assistance
The Georgia Division of Energy Resources and the Georgia Environmental Finance Authority (GEFA) provide assistance to companies that are considering locating alternative fuels production facilities in Georgia. Using a broad network of biomass and energy industry representatives, as well as state and local government leaders, GEFA may provide prospective businesses with useful information and connect businesses with the appropriate contacts. For more information, see the GEFA Renewable Energy and Alternative Fuels Development website.

Emissions Reduction Tax Credit
An income tax credit is available to individuals who install diesel particulate emissions reduction technology equipment at any truck stop, depot, or other facility. The amount of the tax credit is equal to 10% of the total equipment and installation costs and is allowed for the taxable year in which the taxpayer first places the equipment in use. The equipment must meet Georgia Regional Transportation Authority standards and must provide for heat, air conditioning, light, and communications for the driver's compartment of a heavy-duty commercial motor vehicle parked at a truck stop, depot, or other facility. The use of the technology must enable the driver to turn off the vehicle's engine, with a corresponding reduction of particulate emissions. (Reference Georgia Code 48-7-40.19)

Alternative Fuel Vehicle (AFV) High Occupancy Vehicle (HOV) Lane Exemption
AFVs displaying the proper alternative fuel license plate may use HOV lanes, regardless of the number of passengers. For more information on fees and eligibility for the AFV license plate, visit the Georgia Department of Revenue website. (Reference Georgia Code 32-9-4 and 40-2-76)

Reduced Compressed Natural Gas (CNG) Fueling Infrastructure Lease - AGL
Atlanta Gas Light (AGL) offers a reduced cost lease on the BRC FuelMaker Phill CNG vehicle home refueling appliance. To qualify, applicants must be AGL customers, meet the specified credit requirements, and agree to the terms of the standard lease agreement. The $60 per month lease option is available to the first 500 applicants and includes installation costs of up to $2,000. For more information, see the AGL FuelMaker Phill Lease Program (PDF) information.

Plug-In Electric Vehicle Charging Rate Incentive - Georgia Power
Georgia Power offers a Plug-in Electric Vehicle (PEV) time-of-use electricity rate for residential customers who own an electric or plug-in hybrid electric vehicle. The PEV rate is optional and does not require a separate meter.

This incentive is designed to reduce electric vehicle impact on the grid, but also enables further reductions in the total cost of owning an electric vehicle.

Alternative Fuel Excise Tax
Distributors who sell or use motor fuel, including special fuels, are subject to an excise tax of $0.075 per gallon. Motor fuels that are not commonly sold or measured by the gallon and are used in motor vehicles on public highways are taxed according to their gasoline gallon equivalent. A gasoline gallon equivalent (GGE) of compressed natural gas (CNG) must be at least 110,000 British thermal units and a GGE of liquefied natural gas (LNG) must be at least 6.06 pounds. CNG is defined as a mixture of hydrocarbon gases and vapors, consisting principally of methane in gaseous form that has been compressed for use as a motor fuel. LNG is defined as methane or natural gas in the form of a cryogenic or refrigerated liquid for use as a motor fuel. Propane and special fuels sold in bulk to a licensed consumer distributor are exempt from this tax. (Reference House Bill 371, 2013 and Georgia Code 48-9-1 and 48-9-3)

Alternative Fuel Use and Alternative Fuel Vehicle (AFV) Acquisition Requirements
State agencies and departments must prioritize the procurement of high fuel efficiency and flexible fuel vehicles when such technologies are commercially available and economically practical. Additionally, all state-owned fueling facilities must purchase gasoline blended with ethanol and diesel fuel blended with biodiesel for use in state vehicles when available and economically practical. (Reference Executive Order (PDF) 02.28.06.02, 2006)

Kentucky
Source: http://www.afdc.energy.gov/laws/state_summary/KY (last updated April 2013)

Biodiesel Production and Blending Tax Credit
Qualified biodiesel producers or blenders are eligible for an income tax credit of $1.00 per gallon of pure biodiesel (B100) or renewable diesel produced or used in the blending process. Re-blending of blended biodiesel does not qualify for the tax credit. The total amount of credits claimed by all biodiesel producers may not exceed the annual biodiesel tax credit cap of $10 million. Unused credits may not be carried forward. For the purpose of this credit, biodiesel must meet ASTM specification D6751, and renewable diesel is defined as a renewable, biodegradable, non-ester combustible liquid derived from biomass resources that meets ASTM specification D975 or D396. (Reference Kentucky Revised Statutes 141.422 to 141.424)

Qualified producers are defined as entities that manufacture biodiesel at a location in the Kentucky Commonwealth. It is unknown how many producers have used this tax credit. As of October 2013 there were 5 reported biodiesel production facilities, with a capacity of 68 million gallons (http://www.eia.gov/biofuels/biodiesel/production/). Subsequent to the credit being put in place, biodiesel production increased to reach peak capacity, an increase that is attributed at least in part to the institution of this credit.

Ethanol Production Tax Credit
Qualified ethanol producers are eligible for an income tax credit of $1.00 per gallon of corn- or cellulosic-based ethanol that meets ASTM specification D4806. The total credit amount available for producers is $5 million for each fuel type in each taxable year. Unused ethanol credits from one

ethanol-based cap, such as corn, may be applied to another ethanol-based cap, such as cellulosic, in the same taxable year. Unused credits may not be carried forward. Feedstock eligibility restrictions may apply. (Reference Kentucky Revised Statutes 141.422 and 141.4242 to 141.4248)

*Ethanol and biodiesel production credits are attributed to boosting biofuel production, but the exact amount claimed is unknown. According to the Kentucky Clean Fuels Coalition, it is unlikely that these tax credits have notably increased the use of biofuels in Kentucky – most biofuels produced in Kentucky is still exported out of state. No production plants were built as a result of this credit.*

**Alternative Fuel Production Tax Incentives**

The Kentucky Economic Development Finance Authority (KEDFA) provides tax incentives to construct, retrofit, or upgrade an alternative fuel production or gasification facility that uses coal or biomass as a feedstock. KEDFA also provides tax incentives for energy-efficient alternative fuel production facilities and for up to five alternative fuel production facilities that use natural gas or natural gas liquids as a feedstock. Energy-efficient alternative fuels are defined as homogeneous fuels that are produced from processes designed to densify feedstock such as coal, waste coal, or biomass resources and have an energy content that is greater than the feedstock. The incentives may consist of: 1) a refund of up to 100% of the state sales tax paid on the purchase of personal property used to construct the facility; 2) a credit of up to 100% of an approved company’s state income tax and limited liability entity tax that the project generates; 3) up to 4% of the wage assessment of employees whose jobs were created as a result of the construction, retrofit, upgrade, or operation of a qualified facility; and 4) a credit for up to 80% of the severance tax paid for coal, natural gas, or natural gas liquids used as a feedstock. The incentives expire at the time of receipt of the authorized amount or 25 years from activation of the project, whichever occurs first. Approved companies may recover up to 50% of their capital investment via the authorized tax incentives. The minimum capital investment for incentive eligibility is $25 million for an alternative fuel or gasification facility that uses biomass as the primary feedstock; $100 million for an alternative fuel or gasification facility that uses coal, oil shale, or tar sands as the primary feedstock; $25 million for an energy-efficient alternative fuel facility; and $1 million for a facility that uses natural gas or natural gas liquids as the primary feedstock. (Reference Kentucky Revised Statutes 154.27-010 to 154.27-090)

*It is unknown how many companies have been approved for this incentive.*

**Alternative Fuel Research, Development, and Promotion**

The Kentucky New Energy Ventures (KNEV) program provides grants and investments to companies for research, development, and commercialization of alternative fuels and renewable energy. KNEV is designed to: 1) grow Kentucky-based alternative fuel and renewable energy companies to promote commonwealth-wide, innovation-driven economic growth; 2) stimulate private investment in Kentucky-based alternative fuel and renewable energy enterprises; 3) expand the alternative fuel and renewable energy knowledge base, talent force, and industry in Kentucky; 4) develop an alternative fuel and renewable energy resource network to build the technical and business capacity of entrepreneurs through informal and formal strategic support; and 5) build commonwealth-wide awareness of the economic development opportunities Kentucky’s alternative fuel and renewable energy industry offers. For the purposes of KNEV, alternative fuels include biodiesel, ethanol, cellulosic ethanol, synthetic natural gas, fuels produced from coal, and other fuels produced from a renewable or sustainable source. To be eligible, a business must have its principle base of business or at least 51% of the property and payroll in the commonwealth. Additional eligibility requirements apply. For more information, see the KNEV program website. (Reference Kentucky Revised Statutes 154.20-410 and 154.20-415)
This fund is to help support start-up companies that are in pre-seed or seed stage, not for alternative fuel deployment projects. More information about the companies that have been funded thus far is available here: http://startups.kstc.com/portfolio/. Only two companies are obviously associated with alternative fuels or advanced vehicle technologies: Commonwealth Biofuels and Highland Biofuels.

Alternative Fuel and Vehicle Promotion
The Kentucky Department for Energy Development and Independence (Department) encourages the responsible use of transportation fuels by supporting academic research, public education, and collaborative partnerships involving alternative fuels and alternative fuel vehicles (AFVs). The Department facilitates projects that promote the use of AFVs and establish alternative fuel infrastructure in Kentucky. For more information, see the Department website. Point of Contact: Tim Hughes, Director of Division of Biofuels, Kentucky Department for Energy Development and Independence, Phone 502-564-7192, Fax 502-564-7406, timd.hughes@ky.gov. http://energy.ky.gov/Pages/default.aspx.

Though not an incentive, addition of natural gas vehicles on the state bid list has been helpful to many public fleets interested in purchasing alternative fuel vehicles.

Propane Excise Tax Exemption
Propane is exempt from the state excise tax when it is used to operate motor vehicles on public highways provided that vehicles are equipped with carburetion systems approved by the Kentucky Energy and Environment Cabinet or fuel systems that meet Federal Motor Vehicle Safety Standards. (Reference House Bill 212, 2013, and Kentucky Revised Statutes 234.321)

This incentive was new in 2013, so no information regarding its effectiveness was available during the preparation of this report.

Ethanol Infrastructure Grants
The Kentucky Corn Growers' Association (KyCGA) offers grants of $5,000 per pump to retailers installing new E85 dispensers in Kentucky. For more information, see the KyCGA E85 Fuel Dispenser Incentive Program website. Note: Kentucky is a major U.S. corn-producing state.

This grant program supported the installation of five E85 dispensers in 2010, 10 stations from 2011 through 2012, and 15 stations in 2013. This program is responsible for almost half of the E85 fueling stations now available in Kentucky (totaling more than 50 stations, including private pumps). Approximately $50,000 is dedicated for about 10 E85 pumps each year, which is expected to continue for 2014. A map of the current E85 stations is available on the Kentucky Corn Growers Association website: http://www.kycorn.org/documents/e85map.pdf

Clean Transportation Fuels for School Buses
The Kentucky Department of Education (Department) must consider the use of clean transportation fuels in school buses as part of its regular procedure for establishing and updating school bus standards and specifications. If the Department determines that school buses may operate using clean transportation fuels while maintaining the same or a higher degree of safety as fuels currently allowed, it must update the standards and specifications to allow for such use. (Reference House Bill 212, 2013, and Kentucky Revised Statutes 156.153)
In the 2014 minimum school bus requirements, select diesel engines are still listed as required and alternative fuels are not mentioned anywhere in the posted document. There is a special section at the bottom detailing the requirements for hybrid electric school bus options. It is important to note that prior to this clean fuels consideration requirement being put in place in 2013, there was already a significant presence of hybrid school buses in Kentucky as a result of U.S. DOE Clean Cities program support. From 2011-2013, following the use of 156 hybrid-electric school buses in 35 districts driving over 4 million hybrid miles, overall fuel efficiency was improved by 35% compared to standard diesel school buses. The over 4 million hybrid miles logged in this time period created a savings of over 200,000 gallons of fuel and $700,000. There was also one school system that reported use of high-blend ethanol, two school systems reporting using plug-in electric buses, and two school systems reporting use of biodiesel ranging from B2 to B20.

Vehicle Acquisition Priorities and Alternative Fuel Use Requirement
The Kentucky Finance and Administration Cabinet (Cabinet) must develop a strategy to replace at least 50% of commonwealth motor fleet light-duty vehicles with energy-efficient vehicles including hybrid electric, advanced lean burn, fuel cell, and alternative fuel vehicles. The Cabinet must also develop a strategy to increase the use of ethanol (including cellulosic ethanol), biodiesel, and other alternative fuels in commonwealth motor vehicle fleets. The Cabinet must report targeted vehicle and fuel usage amounts annually. For more information, see the Cabinet website. (Reference House Bill 212, 2013, and Kentucky Revised Statutes 45A.625)

State Energy Plan Alternative Fuel Requirements
The Department for Energy Development and Independence (Department) oversees the development and implementation of Kentucky’s comprehensive energy strategy. Specifically, the Department must develop and implement a strategy for the production of alternative transportation fuels and synthetic natural gas from fossil energy resources and biomass resources, including biodiesel and ethanol. Kentucky’s Governor’s developed a commonwealth energy plan, Intelligent Energy Choices for Kentucky’s Future, in 2008. This plan proposes seven strategies to support a renewable and efficiency portfolio standard and to develop an alternative transportation fuel standard and set fuel production goals. For more information, see the Department's Energy Plan website. (Reference Kentucky Revised Statutes 152.720)

Kentucky’s Energy Plan, drafted in 2008, includes an Alternative Transportation Fuel Standard (ATFS), supported by 3 of the 7 standards: “improve energy efficiency of…Kentucky’s transportation fleet”, “sustainably grow Kentucky’s production of biofuels”, and “develop a coal-to-liquids industry in Kentucky to replace petroleum-based liquids”. One expected outcome of the ATFS that relates to petroleum displacement is production of 4 billion gallons of liquid fuels from coal.


Compressed Natural Gas Deregulation
The Kentucky Public Service Commission may not regulate the rates, terms, or conditions of service for the sale of CNG to a fueling station, retailer, or to any end-user for use as a motor vehicle fuel. (Reference Kentucky Revised Statutes 278.508)

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5 http://kentuckycleanfuels.org/projects/greenfleets/best-practices/best-practices-for-fuel/
The Incentives for Energy Independence Act (new in 2013, not included in the AFDC website)
The IEIA was established in 2007 by a special session, but amended in 2013 to include CNG and LNG stations as eligible projects. While the terms of the program are negotiated by the Cabinet for Economic Development, The Kentucky Economic Development Finance Authority has application approval responsibility. Any company that constructs, retrofits, or upgrades a facility to increase the production and sale of alternative transportation fuels (including CNG and LNG) are eligible for sales and use tax refunds, severance tax incentives, corporate income tax credits, and/or wage assessment incentives. (Reference Kentucky Revised Statutes 154.27-010 through 154.27-090, and thinkkentucky.com/kyedc/pdfs/ieia.pdf)

This new fund for alternative fuel infrastructure was clarified and put into action in mid-2013. While this incentive has not been in place long enough to draw concrete conclusions on its value, early feedback suggests that it will be instrumental in encouraging the use of alternative fuels and alternative fuel vehicles. As of January 2014, one company had applied and been approved for this credit.

Chapter 116 (HB 212) (new in 2013, not included in the AFDC website)
This included an array of changes and additions to the state’s approach towards alternative fuels, including an amendment to KRS 234.321 that removes the tax on propane when sold/used as a transportation fuel in an EPA-certified vehicle.

The incentives below were in place at the start of compiling this report, but have since been repealed or allowed to expire.

Low Emission Vehicle Electricity Rate Incentive - Louisville Gas & Electric
Louisville Gas & Electric (LG&E) offered a 3-year pilot Low Emission Vehicle (LEV) time-of-use electricity rate for residential customers who own an electric vehicle, plug-in hybrid electric vehicle, or natural gas vehicle fueled through a home fueling appliance. The rate was limited to 100 residential customers. For more information, see the LG&E LEV Pilot website.

This incentive was designed to reduce electric vehicle impact on the grid, but also enable further reductions in the total cost of owning an electric vehicle. In the 3 years that the pilot program was active, only 9 customers took advantage of the reduced rate.

North Carolina

Alternative Fuel Vehicle (AFV) and Hybrid Electric Vehicle (HEV) Support
The Clean Fuel Advanced Technology (CFAT) project focuses on reducing transportation-related emissions in non-attainment and maintenance counties for National Ambient Air Quality Standards. A project that is adjacent to these areas may also be eligible if the project will reduce emissions in eligible counties. The North Carolina Department of Transportation funds the CFAT project, which covers three broad areas: education and outreach; sub award project funding; and recognition of exemplary activities. Over the course of the 3 year project phase over $4,000,000 in financial support will be allocated through three request for proposals processes to support purchase of AFVs, hybrid electric vehicles, alternative fuel infrastructure, idle reduction technologies, and diesel retrofits that meet or are exempt from Buy America requirements or have received Buy America requirement waivers. In late
2013 The CFAT project has received a Buy America waiver to support the incremental cost of AFVs and eligible hybrid electric vehicles. The first request for proposals (RFP) was completed in September 2013, and a second round was announced in January 2014.

Under the most recent RFP, 18 proposals were approved for a total of $1.7 million in sub-awards funding. Additionally, almost $2.5 million in cost shared funds were committed by the awardees towards completing the approved projects. The projects will benefit at least 16 counties, and include an array of fuels and technologies: CNG, propane and biodiesel stations; CNG and propane vehicle up-fits, hybrid electric vehicle conversions, electric vehicle charging stations, telematics, and idle reduction technology.

Idle Reduction Technology Rebates
The North Carolina Department of Environment and Natural Resources (NCDENR) Division of Air Quality offers rebates of up to $2,500 for approved idle reduction technologies through the Idle Reduction Devices Rebate Program. Eligible technologies must be purchased after January 1, 2009, and approved by the U.S. Environmental Protection Agency or California Air Resources Board. Businesses may receive a maximum of six rebates, and NCDENR gives priority to individuals or businesses that have not previously received a rebate. Additional restrictions apply. Total funding remaining as of January 2014 was $45,000. To register for the rebate funding availability announcement and information on future funding opportunities, contact NCDENR.

There have been 325 rebates issued under this program so far from 2009 through 2013 (2013 data incomplete, no rebates reported for 2010):

Some of the 2012 and 2013 funds seeding the Idle Reduction Rebate program were used for grants in 2012 and 2013, which is why the number of rebates issued during that time were so much lower than previous years. The demand for these rebates is very high, with calls coming in weekly even after all the funds have been expended. This is considered by NCDENR DAQ staff to be an excellent fuel reduction tool because truck drivers are required to rest for 10 hours on each day that they drive, and they often idle during this rest period.
Alternative Fuel and Idle Reduction Grants
The North Carolina Department of Environment and Natural Resources Division of Air Quality provides grants for the incremental cost of purchasing original equipment manufacturer alternative fuel vehicles, vehicle conversions, and implementing idle reduction programs. For more information see the Diesel Emission Reductions Grants website.

Under the DERG program in 2012 and 2013, the Department of Air Quality funded 8 projects for $233,964, including 9 vehicles and 5 APUs, which displaced 619,649 gallons of diesel. In that same time period DERA program leveraged $884,666 in additional private funding, which funded 21 additional equipment retrofit projects. NCDAQ expects to give out up to 35 additional DERG grants in 2014, and as of January 2014 it was expected that another round of funding would be made available.

High Occupancy Vehicle (HOV) Lane Exemption
Qualified plug-in electric vehicles, dedicated natural gas vehicles, and fuel cell electric vehicles may use North Carolina HOV lanes, regardless of the number of occupants. (Reference North Carolina General Statutes 20-4.01 and 20-146.2)

According to the Centralina Clean Cities Coalition in Charlotte, NC, this incentive has not been influential in PEV decision purchases. This is likely because the HOV lanes themselves are rarely utilized, nor are they located in the areas of heaviest congestion. Several areas in North Carolina – the Triangle, Triad, and Charlotte Metro area – are experiencing heavy growth leading to increased traffic congestion. If future HOV lanes are better sited, having the HOV lane exemption already in place would likely gain influence in PEV purchase decisions.

Plug-In Electric Vehicle (PEV) Emissions Inspection Exemption
Qualified PEVs are exempt from state emissions inspection requirements. Other restrictions may apply. (Reference North Carolina General Statutes 20-4.01 and 20-183.2)

Renewable Energy Property Tax Credit
Taxpayers who construct, purchase, or lease renewable energy property may qualify for a tax credit equal to 35% of the cost of the property. Renewable energy property includes equipment that uses renewable biomass resources to produce ethanol, methanol, biodiesel, or methane produced from anaerobic biogas, using agricultural and animal waste or garbage; and related devices for converting, conditioning, and storing the liquid fuels and gas produced with the biomass equipment***. The taxpayer must claim the credit in five equal installments beginning with the taxable year in which the property is placed into service. There is a maximum credit amount of $2.5 million per installation, which applies to renewable energy property placed in service for any purpose other than residential. To qualify, property must be placed into service before January 1, 2016. (Reference North Carolina General Statutes 105-129.15 and 105-129.16A)

In 2012 (calendar year) there were $27,904,722 in credits taken by almost 1500 different taxpayers under the Renewable Energy Property Tax Credit (REPTC) (http://www.dorc.com/publications/incentives/2013/)

<table>
<thead>
<tr>
<th>Renewable energy property tax credit</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>$ in credits</td>
<td>$5,232,172</td>
<td>$11,295,327</td>
<td>$27,904,722</td>
</tr>
<tr>
<td># of taxpayers</td>
<td>929</td>
<td>1123</td>
<td>1494</td>
</tr>
</tbody>
</table>
While equipment using biomass-produced energy is eligible, so are hydroelectric generators, wind equipment, geothermal heat pumps, and solar energy equipment. The assumption is that a large majority of this credit represents solar installations. There is a pattern of increase in the value of credits taken, with a 433% increase in credits claimed between 2010 and 2012. The number of installations, however, has remained stagnant, indicating that the size of installations has increased. It is not possible to determine if any of these “renewable energy” properties are related to transportation fuels, but given that North Carolina has both a renewable portfolio standard, which requires the use of renewable energy (such as solar), and has a tax credit to support construction, it is assumed that the solar industry, not biofuels/biomass has benefited the most. Biofuels have neither of these “carrots and stick” requirements and incentives in North Carolina. In Q4 2013 NC was ranked #2 in the U.S. for installed solar. This attests to the strong correlation between increased utilization in states with requirements to use renewable energy and tax incentives to offset the cost. It should be noted that the direct economic activity attributed to the REPRC is ten times the cost of the credit to the State.

Bond Exemption for Small Biofuels Suppliers
Fuel blenders or suppliers of ethanol or biodiesel are not required to file a bond with the North Carolina Department of Revenue when the expected motor fuel tax liability is less than $2,000. (Reference North Carolina General Statutes 105-449.72(a))

There is no information how many suppliers have foregone filing the bond under this exemption, and no real way to determine how effective it has been in supporting small biofuels suppliers in North Carolina.

Alternative Fuel and Alternative Fuel Vehicle (AFV) Fund
The North Carolina State Energy Program administers the Energy Policy Act (EPAct) Credit Banking and Selling Program, which enables the state to generate funds from the sale of federal EPAct credits. The funds from EPAct credit sales are deposited into the Alternative Fuel Revolving Fund and can be used by state agencies to offset the incremental costs of purchasing biodiesel blends of at least 20% (B20) or ethanol blends of at least 85% (E85), developing alternative fueling infrastructure, and purchasing AFVs and hybrid electric vehicles. Funds are distributed to state departments, institutions, and agencies in proportion to the number of EPAct credits generated by each. The Fund also covers additional projects approved by the Energy Policy Council. (Reference North Carolina General Statutes 143-58.4, 143-58.5, 143-341(8)i, and 136-28.13)

Due to the extensive use of biofuels by the NC Department of Transportation and NC Department of Administration (Motor Fleet Management), almost 1500 excess credits have been earned and sold, yielding the state of North Carolina over $1.4 million from 2007 through FY12-13. All expenditures have gone towards the purchase of flex fuel vehicles and installation of E85 refueling equipment.

Biodiesel Warranty Requirement
All new state government diesel vehicles must have a manufacturer’s warranty that allows the use of biodiesel blends of 20% (B20) in the vehicle. This requirement does not apply if the North Carolina Department of Administration determines that there is no vehicle available that is suited for the intended use and that has a manufacturer’s warranty allowing the use of B20. (Reference North Carolina General Statutes 20-351.11, 136-28.15, and 143-341(8)(i))
**Biodiesel Requirement for School Buses (Biodiesel Blitz)**

Every school bus that is capable of operating on diesel fuel must be capable of operating using blends of at least 20% biodiesel (B20). At least 2% of the total volume of fuel purchased annually by local school districts statewide for use in diesel school buses must be a minimum of B20, to the extent that biodiesel blends are available and compatible with the technology of the vehicles and the equipment used (North Carolina General Statutes 115C-240(c) and 115C-249(a)).

The Biodiesel Blitz program has been under way since it was put in place by the legislature in 2007. The first available data starts in 2010, when 16 county school systems participated in the program using an unspecified amount of biodiesel.

<table>
<thead>
<tr>
<th></th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
</tr>
</thead>
<tbody>
<tr>
<td># NC Counties</td>
<td>16</td>
<td>13</td>
<td>1</td>
<td>6</td>
</tr>
<tr>
<td># Gallons B20</td>
<td>N/A</td>
<td>178,000</td>
<td>N/A</td>
<td>190,000</td>
</tr>
</tbody>
</table>

**Fuel-Efficient Vehicle Acquisition Requirements**

When purchasing new state vehicles, the North Carolina Department of Administration must give purchase preference to vehicles with fuel economy ratings that rank among the top 15% of comparable vehicles in their class. (Reference North Carolina General Statutes 143-341(8)(i))

**Alternative Fuel Vehicle (AFV) Acquisition Requirements**

Sets a goal of at least 75% of new or replacement state government light-duty cars and trucks with a gross vehicle weight rating of 8,500 pounds or less to be AFVs or low emission vehicles. (Reference North Carolina General Statutes 143-215.107C).

While there is no known tracking of the new vehicle purchase requirement, from July 2005 through July 2012 the composition of passenger vehicles in the largest state fleets was tracked and reported under the Petroleum Displacement Plan requirement. As of July 2012, 29.4% of the vehicles in the 37 largest state agencies/organizations were alternative fuel vehicles, primarily E85 flexible fuel vehicles (29% excluding hybrids and diesel vehicles). This is an increase from the previous year, when the proportion was 27.7% AFVs (27.3% excluding hybrids and diesel vehicles).
Though CNG, propane and electric vehicles combined make up a much smaller percentage of the total state fleet – most of the AFVs are flex fuel vehicles – even with FFVs removed the percentage of AFVs in the state fleet rose each year from the baseline year (0.8%) to 2011-2012 (1.5%).

School Bus Idle Reduction Requirement
All local boards of education in North Carolina have adopted idle reduction policies prohibiting school buses from idling unnecessarily on school grounds or warming up for longer than five minutes. For more information, including a sample policy and administrative procedure, see the North Carolina School Boards Association Reduced Idling Materials website.

NC PEV Readiness Task Force (not included in the AFDC website)
Instituted in 2012 as part of the U.S. DOE-funded “Mountains to Sea” project, the NC PEV Task Force pulled together experts and advocates from across North Carolina. The Task Force was charged with developing one statewide and 4 regional Plug In Electric Vehicle Readiness Plans aimed at identifying barriers to PEV adoption as well as priority tasks to reduce those barriers. These plans were published in February 2013. (http://wwwadvancedenergy.org/portal/ncpev/).

The NC PEV Readiness Plans have been referred to repeatedly in applications for vehicle and infrastructure grant funds, charging station installation projects, etc. The Task Force continues to meet several times per year to further work begun under the DOE-funded project, and has since convened various workshops and webinars aimed at breaking down barriers to more widespread PEV adoption in North Carolina. As of August 2013 there were 1678 plug-in electric vehicles registered in North Carolina, a 233% increase from the number registered as of August 2012.

Petroleum Displacement Requirement (not included in the AFDC website)
As part of North Carolina’s 2005 Budget Provision 19.5, state agencies, universities and affiliates, and community colleges were required to achieve a 20% reduction or displacement of their baseline...
petroleum use (2004-2005 fiscal year) by January 2010 through the use of alternative fuels, conservation and/or efficiency. Note: the provision was later extended twice, eventually out to 2016. In 2013 the reporting requirement for this provision was allowed to sunset, but the requirement to track and displace petroleum use remains in place.

From 2004-2005 through the final reporting year, though the total state vehicle count remained relatively stable, the percent of the state fleet that was comprised of alternative fuel vehicles increased every year (see Figure above under Alternative Fuel Vehicle Acquisition Requirements entry). The percentage of fuel used that was alternative also increased year over year, from just 2.7% in 2004-2005 to a high of 13.4% in 2011-2012. Fleet contacts frequently cited compliance with the PDP requirement as an important reason for their increased adoption of alternative fuel vehicles.

**State Purchasing Contract (not included in the AFDC website)**

*Though not an incentive, pending addition of propane and natural gas vehicles, fuel, and fueling infrastructure on the state bid list is likely to be helpful to the many public fleets interested in purchasing and fueling alternative fuel vehicles. Refer to the Purchasing and Contracts website for all contracts, and www.cleantransportation.org for updates on only transportation-related contracts.*

**Corporate Incentives (not included in the AFDC website)**

Companies are helping to raise awareness about and encourage the use of alternative fuel and advanced technology through employee incentives. Following are examples of program instituted by companies with headquarters in North Carolina

- Burt’s Bees, based in Durham, North Carolina, operates an employee Sustainable Living Credit (SLC) program that provides $150 annually towards the purchase or lease of fuel efficient or fuel free vehicles or for the purchase of alternative fuels.
- Celgard, a company that makes key components for electric vehicle batteries in North Carolina, offers a $1,800 employee incentive to purchase a Chevy Volt and Nissan Leaf that will extend into 2014. In 2011 Celgard announced plans to provide at least two Chevy Volts for employee trips between the plants in Charlotte and Concord, and to provide special parking for employee’s hybrid vehicles.
- Bank of America (BoA) has an incentive for hybrid, highway-capable electric (EVs) or compressed natural gas vehicle (CNG). BoA’s program is open to all US benefits-eligible employees who work at least 20 hours a week will reimburse $3000 for purchase a hybrid, EV or CNG vehicle. The incentive was rolled out in 2006, and to date BoA has reimbursed more than 6,000 employees.

The incentives below were in place at the start of compiling this report, but have since been repealed or allowed to expire.

**Renewable Fuel Production Facility Tax Credit (including Biodiesel Fueling Infrastructure and Production Facilities)**

A taxpayer that constructs and places into service three or more commercial facilities for processing biodiesel, ethanol, or ethanol/gasoline blends consisting of at least 70% ethanol (E70) in North Carolina
and invests at least $400 million in the facilities may be eligible for a credit equal to 35% of the cost of constructing and equipping the facilities. To claim the credit, the taxpayer must obtain a written determination from the North Carolina Department of Commerce that the taxpayer is expected to invest at least $400 million in three or more facilities within a five-year period. The credit applies only to qualified facilities placed into service before January 1, 2014. (Reference North Carolina General Statutes 105-129.16D)

**Biodiesel Fueling Infrastructure Tax Credit**

A taxpayer who constructs a qualified fueling facility that dispenses biodiesel, ethanol, or gasoline blends consisting of at least 70% ethanol (E70) is eligible for a tax credit equal to 15% of the cost of constructing and installing the dispensing infrastructure that is directly and exclusively used for dispensing or storing the fuel, including pumps, storage tanks, and related equipment. The taxpayer must take the credit in three equal annual installments beginning with the taxable year in which the facility is placed into service. This tax credit does not apply to infrastructure placed into service on or after January 1, 2014. (Reference North Carolina General Statutes 105-129.16D(a))

**Biofuel Production Facility Tax Credit**

A taxpayer who processes biodiesel, ethanol, or gasoline blends consisting of at least 70% ethanol (E70) is eligible for a tax credit equal to 25% of the cost of constructing and equipping the processing facility. The taxpayer must take the credit in seven equal annual installments beginning with the taxable year in which the facility is placed into service. This tax credit does not apply to infrastructure placed into service on or after January 1, 2014. (Reference North Carolina General Statutes 105-129.16D(b))

In 2012 (calendar year) there were $177,629 in credits taken by 20 different taxpayers under the Renewable Fuel Production Facility Tax Credit, (biodiesel and ethanol are considered renewable fuels) (http://www.dornc.com/publications/incentives/2013/4_3b_constructing_ren_fuel_fac12.pdf). This is a decline from 2011 levels, but still higher than levels seen in 2010.

<table>
<thead>
<tr>
<th>Renewable fuel production facility tax credit</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>$ in credits issued</td>
<td>$50,919</td>
<td>$3,758,510</td>
<td>$177,629</td>
</tr>
<tr>
<td># of taxpayers filing</td>
<td>13</td>
<td>56</td>
<td>20</td>
</tr>
<tr>
<td># of installations constructed</td>
<td>7</td>
<td>7</td>
<td>7</td>
</tr>
</tbody>
</table>

This credit (and all related subsets) has been repealed for all those facilities placed into service after January 1, 2014.

**Biodiesel Production Excise Tax Credit**

A biodiesel producer that produces at least 100,000 gallons of biodiesel during the taxable year is allowed a credit equal to the per gallon excise tax the producer paid in accordance with the motor fuel excise tax rate. The credit only applies to tax paid on the biodiesel portion of the fuel blend and the credit may not exceed $500,000. This tax credit was effective until January 1, 2014. (Reference North Carolina General Statutes 105-129.16F)

Without this credit, use of biodiesel in on-road vehicles incurs a state motor fuels excise tax on each gallon used. In 2013 the motor fuels excise tax rates were $0.375 (QTR 1 and 2) and $0.376 (QTR 3 and 4) per gallon. In 2012 (calendar year) there were $30,532 in credits taken by 5 different taxpaying entities (http://www.dornc.com/publications/incentives/2013/6_3b_biodiesel_producers12.pdf). There is
a pattern of decline in the value of credits taken, with a nearly 260% decline in credits claimed between 2010 and 2012.

<table>
<thead>
<tr>
<th>Biodiesel producers excise tax credit</th>
<th>2010</th>
<th>2011</th>
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</tr>
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<tbody>
<tr>
<td>$ in credits issued</td>
<td>$108,833</td>
<td>$67,603</td>
<td>$30,532</td>
</tr>
<tr>
<td># of taxpayers filing for credit</td>
<td>6</td>
<td>5</td>
<td>5</td>
</tr>
</tbody>
</table>

**South Carolina**


**Plug-In Hybrid Electric Vehicle (PHEV) Tax Credit**

For taxable years before 2017, an income tax credit is available for the in-state purchase or lease of a new PHEV. For the purpose of this incentive, a PHEV is a vehicle equipped with an internal combustion and an electric engine with an all-electric range of not less than nine miles and at least four kilowatt hours (kWh) of battery capacity. The credit is equal to $667, plus $111 if the vehicle has at least five kWh of battery capacity, plus an additional $111 for each additional kWh, with a maximum allowed credit of $2,000. Low- or medium-speed vehicles do not qualify for this credit. Total claims for all taxpayers in one year may not exceed $200,000 and are available on a first come, first served basis. *(Reference [House Bill 3059, 2012](http://www.afdc.energy.gov/laws/state_summary/SC) and [South Carolina Code of Laws 12-6-3376](http://www.afdc.energy.gov/laws/state_summary/SC))*

*This credit was only recently passed, so its effectiveness is currently unknown. It is important to note that it only applies to hybrid electric vehicles, and does not include 100% electric drive vehicles like the Nissan Leaf and Ford Focus Electric.*

**Battery Manufacturing Tax Incentives**

For taxation purposes, the taxable fair market value of manufacturing machinery and equipment purchased for use at a renewable energy manufacturing facility may be reduced by 20% of the original cost. Qualified renewable energy manufacturing facilities include those manufacturing batteries for hybrid electric, fuel cell, or other motor vehicles the South Carolina Energy Office has certified. Qualified facilities must invest at least $100 million in the project and create at least 200 new full-time jobs with an average compensation level of 150% of the annual per capita income in South Carolina or the county where the facility is located, whichever is less. Qualified facilities may also claim job development tax credits for employee relocation expenses through July 1, 2014. Additional restrictions apply. *(Reference [South Carolina Code of Laws 12-6-3377, 12-10-30, 12-10-80, 12-15-20, 12-15-30, 12-37-930](http://www.afdc.energy.gov/laws/state_summary/SC))*

*There are no known battery manufacturing facilities in South Carolina, nor is there a reporting mechanism for this incentive, so it is unknown how effective it has been in encouraging growth in the battery manufacturing industry in South Carolina.*

**Biofuels Distribution Infrastructure Tax Credit**

A taxpayer that purchases, constructs, or installs, and places into service a qualified commercial facility for distributing or dispensing biofuels is eligible for an income tax credit of up to 25% of the purchase, construction, and installation costs. Eligible property includes pumps, storage tanks, and related
equipment used exclusively for distribution, dispensing, and storing biofuels. A qualified facility must clearly label the equipment used to store or dispense the fuel as being associated with the biofuel. The credit must be taken in three equal annual installments beginning with the taxable year in which the facility is placed into service. Qualifying fuels include blends containing at least 70% ethanol (E70) dispensed at the retail level for use in motor vehicles, and pure ethanol or biodiesel fuel dispensed by a distributor or facility that blends these non-petroleum liquids with gasoline or diesel fuel for use in motor vehicles. (Reference South Carolina Code of Laws 12-6-3610)

To date there have been eleven applicants for this tax credit. Station owners report that their main reason for installing E85 dispensing equipment is because they believe in the future of biofuels – while they hope that the market will turn a corner in the future, they are losing money on E85 in the meantime.

South Carolina instituted an E85 sales incentive in 2009 offering a $0.05 incentive payment to E85 retailers for each gallon of E85 sold (South Carolina Code of Laws 12-63-20). There was an immediate increase in fueling stations offering E85, likely a direct result of this incentive. This payment program was allowed to lapse in 2012, after which the Palmetto State Clean Fuels Coalition observed a steady decline in the number of stations offering E85. This strongly suggests that incentives that enable reductions in the price that consumers pay for E85 are effective at encouraging E85 use.

Biofuels Production Facility Tax Credit
A taxpayer that constructs and places into service a commercial facility for the production of biofuel is eligible for a tax credit of up to 25% of the cost of constructing or renovating a building and equipping the facility. Production of biofuel includes intermediate steps such as milling, crushing, and handling feedstock and the distillation and manufacturing of the final product. The entire credit must be taken in seven equal annual installments beginning with the taxable year in which the facility is placed into service. Qualifying fuels include liquid non-petroleum based fuel that can be placed in motor vehicle fuel tanks and used to operate on-road vehicles, including all forms of fuel commonly or commercially known or sold as biodiesel and ethanol. (Reference South Carolina Code of Laws 12-6-3610)

To date there have been six applicants for this tax credit.

Fuel Cell Vehicle Tax Credit (Alt Fuel Vehicle Tax Credit)
South Carolina residents that claim the federal fuel cell vehicle tax credit are eligible for a state income tax credit equal to 20% of the federal credit. If the amount of the state credit exceeds the taxpayer’s liability for the applicable tax year, any unused portion of the credit may be carried forward and claimed for up to five additional years. (Reference South Carolina Code of Laws 12-6-3377)

While this credit remains part of South Carolina’s Code of Laws, the South Carolina Department of Revenues relies on the federal law and list of approved vehicles, which is now expired, and therefore no longer has a mechanism in place to grant the credit to any applicants. The incentive continues to attract inquiries and interest, and the Department of Revenue continues to look for mechanisms to allow for the credit.

Hydrogen and Fuel Cell Tax Exemption
The following are exempt from state sales tax: 1) any device, equipment, or machinery operated by hydrogen or fuel cells; 2) any device, equipment, or machinery used to generate, produce, or distribute hydrogen and designated specifically for hydrogen or fuel cell applications; and 3) any device,
equipment, or machinery used predominantly for manufacturing, or research and development involving hydrogen or fuel cell technologies. (Reference South Carolina Code of Laws 12-36-2120(71))

There is no reporting mechanism for this incentive, so it is unknown how effective it has been in encouraging growth in the use of hydrogen and fuel cell technology in South Carolina.

Idle Reduction Weight Exemption
Any motor vehicle or combination of vehicles equipped with idle reduction technology is allowed to exceed the maximum gross vehicle and axle weight limits by up to 400 pounds to compensate for the added weight of the idle reduction technology. The vehicle operator must provide documentation that the vehicle is equipped with idle reduction technology. (Reference South Carolina Code of Laws 56-5-4160)

Idle Reduction Requirement
Vehicle operators may not idle any commercial diesel vehicle with a gross vehicle weight rating of more than 10,000 pounds for more than 10 minutes in any one-hour period. Exemptions apply for the following: traffic conditions; prevention of safety or health emergencies; emergency or law enforcement; maintenance, service, repair, or diagnostic purposes; state or federal inspections; power work-related operations; loading or unloading; sleeper berth temperature control during 1) rest or sleep periods, 2) times when the ambient outside air temperature is less than 40 degrees Fahrenheit or greater than 80 degrees Fahrenheit, or 3) at rest areas, terminals, truck stops, or legal parking locations greater than 500 feet from homes, schools, hospitals, or daycare facilities. Violators are subject to a $75 fine for each offense. (Reference South Carolina Code of Laws 56-35-10 to 56-35-80)

State Agency Preference for Alternative Fuel and Advanced Vehicles
State agencies purchasing motor vehicles must give preference to hybrid, plug-in hybrid electric, biodiesel, hydrogen, fuel cell, or flexible fuel vehicles when the performance, quality, and anticipated lifecycle costs are comparable to other available motor vehicles. (Reference South Carolina Code of Laws 1-11-310)

There is no reporting mechanism for this incentive, so it is unknown how effective it has been in growing the fleet of state vehicles capable of running on alternative fuels.

State Agency Alternative Fuel Use Requirement
Whenever practical and economically feasible, all state agencies operating alternative fuel vehicles must use alternative fuels in those vehicles. Private businesses are encouraged to increase the use of alternative fuels in the state. (Reference Executive Order 2001-35)

There is no reporting mechanism for this incentive, so it is unknown how effective it has been in growing the fleet of state vehicles capable of running on alternative fuels.

Biodiesel Use in School Buses
The South Carolina Department of Education must fuel state school bus fleets with biodiesel when feasible. (Reference South Carolina Code of Laws 59-67-585)
In 2010 the school bus fleet moved to B5 and had plans to transition to B20, but only got as high as B10 before deciding to stop using biodiesel altogether. Most of the vehicles currently in the fleet at that point were considered too old to safely use biodiesel at any blend (at that time only used buses were being purchased, and were already quite old before being incorporated into the SC fleet), and they began to experience problems with their O-rings and injectors as a result. Once the SC Department of Education resumes new bus purchases they plan to resume use of biodiesel. Unrelated to this requirement, South Carolina’s Department of Education also installed telematics software on all state owned buses to track and reduce idling, and incorporated hybrid technology into their bus fleet (two plug-in diesel electric buses in 2007 and two regenerative braking hybrids in 2010).

Tennessee


Biofuel Fueling Infrastructure Grants
The Tennessee Department of Transportation (TDOT) engages in public-private partnerships with transportation fuel providers to install biofuel fueling facilities. Fueling facilities include storage tanks and fuel pumps dedicated to dispensing E85 and biodiesel blends of 20% (B20). TDOT administers the [Biofuel Green Island Corridor Grant Project](http://www.afdc.energy.gov/laws/state_summary/TN) (Project) to provide financial assistance for purchasing, preparing, and installing fueling facilities at private sector fuel stations. The goal of the Project is to help establish biofuel stations within 100 miles of each other along Tennessee’s interstate system and major highways. As of July 2013, there are no open grant solicitations. (Reference [Tennessee Code](http://www.afdc.energy.gov/laws/state_summary/TN) 54-1-136 and [Executive Order 33, 2006](http://www.afdc.energy.gov/laws/state_summary/TN))

To date this program has funded a total of 23 E85 pumps and 19 B20 pumps. In most locations only one biofuel was installed, but both E85 and B20 were made available at a few locations. As of May 2013 there were reported to be a total of 34 E85 pumps and 23 B20 pumps for public use in Tennessee, so there was some growth in biofuels offerings outside of this grant program. Another solicitation for this funding is expected to be released by early 2014, but this is likely to be the last such solicitation before the program is ended. The program provides up to 80% of the purchase and installation cost is covered for installing E85 and/or B20 pumps, up to $45,000 per fuel installed. This means that a single station could receive up to $90,000 for installing both fuels. Applicants must be placing stations along well-traveled corridors or in desired locations that help fill in gaps in biofuels availability.

Natural Gas Station Property Tax Reduction
Any public utility, commercial, or industrial property certified to fuel natural gas vehicles may not be valued for property tax purposes at more than 30% of its total installed cost. The Tennessee Department of Environment and Conservation must certify that the station uses compressed or liquefied natural gas for the purpose of fueling motor vehicles and is projected to displace more than 6,000 gallons of petroleum annually. (Reference [House Bill 1272, 2013](http://www.afdc.energy.gov/laws/state_summary/TN), and [Tennessee Code](http://www.afdc.energy.gov/laws/state_summary/TN) 67-5-601 and 67-4-2004).

High Occupancy Vehicle (HOV) Lane Exemption
Vehicles that the U.S. Environmental Protection Agency defines as Inherently Low Emission Vehicles or Low Emission and Energy-Efficient Vehicles and have gross vehicle weight ratings of 26,000 pounds or less are permitted use of HOV lanes regardless of the number of occupants. Such vehicles must display a Tennessee Department of Revenue decal. (Reference [Tennessee Code](http://www.afdc.energy.gov/laws/state_summary/TN) 55-8-188)
The incentives below were in place at the start of compiling this report, but have since been repealed or allowed to expire.

**Plug-in Electric Vehicle (PEV) Rebate**

Through the state’s participation in the EV Project, the Tennessee Department of Revenue (Department) offers a rebate of $2,500 on the first 1,000 qualified PEVs purchased in Tennessee. The Department will administer the rebate program in cooperation with Nissan's automotive dealerships in the state.

This rebate program was terminated with the completion of The EV Project, in early 2013. Not all of the allotted funding was distributed, yet over 700 rebates were provided to help consumers offset the purchase price of LEAFs, Volts, Tesla Model S cars and Ford C-Max Energi sedans. East Tennessee Clean Fuels Coalition estimates that the EV Project has helped quickly boost EV ownership in Tennessee, which as of late fall 2013 was in the range of 900-1,000 vehicles.

**Biodiesel Production Incentive**

The Tennessee Department of Revenue administers the biodiesel manufacturers' incentive fund, which provides Tennessee biodiesel producers with payments for biodiesel fuel produced and sold to Tennessee distributors. Each manufacturer may receive incentives for up to 10 million gallons of biodiesel produced annually. This incentive was available through June 30, 2013, and funding must be appropriated each year. (Reference Tennessee Code 67-3-103 and 67-3-423)

As of October 2013, there were two biodiesel production facilities in Tennessee, with a combined production capacity of 2 million gallons per year. Funding was not appropriated for 2014.

**Virginia**


**Biodiesel Production Tax Credit**

Qualified biodiesel and green diesel producers are eligible for a tax credit of $0.01 per gallon of biodiesel or green diesel fuels produced. This credit is available for producers who generate up to two million gallons of biodiesel or green diesel fuel per year. The annual credit may not exceed $5,000, and producers are only eligible for the credit for the first three years of production. The Virginia Department of Mines, Minerals and Energy must certify qualified producers. For more information, see the Virginia Department of Taxation website. (Reference Virginia Code 58.1-439.12:02)

The language of this credit specifically excludes many existing state biodiesel producers and small producers from applying. At this time no producer is eligible for the credit, rendering it ineffective as an incentive to produce biodiesel.

**Biofuels Production Grants**

The Biofuels Production Incentive Grant Program provides grants to producers of advanced biofuels, specifically fuels derived from any cellulose, hemicellulose, or lignin from renewable biomass or algae.
A qualified advanced biofuels producer is eligible for a grant of $0.125 for each gallon of neat (100%) advanced biofuel sold. A producer of non-advanced biofuels, including biodiesel, green diesel, and ethanol fuel, is eligible for a grant of $0.10 per gallon of neat biofuel sold in the commonwealth. To qualify, a producer must have begun selling neat biofuels on or after January 1, 2008, and must have produced at least one million gallons of neat biofuels before September 30, 2011. If a producer began selling neat biofuels before January 1, 2008, the producer is only eligible for a grant if its production of neat biofuels for the given calendar year exceeds its production in the 2007 calendar year by at least one million gallons and, in future years, continues to meet or exceed that amount. Each producer is only eligible for six calendar years of grants. This program expires June 30, 2017. (Reference Virginia Code 45.1-393 and 45.1-394)

The grant program language was written to exclude many producers. At this time no biofuel producer is eligible for the grant and none have been able to take advantage of this program.

Clean Energy Manufacturing Grants
The Clean Energy Manufacturing Incentive Grant Program provides financial incentives to clean energy manufacturers, including biofuel producers. A producer is eligible for grant if it commences or expands operations in Virginia on or after July 1, 2011. Producers must make a capital investment greater than $50 million and create at least 200 full-time jobs that pay at least the prevailing wage. For more information, see the Virginia Department of Mines, Minerals and Energy website. (Reference Virginia Code 59.1-284.26 through 59.1-284.27)

To date, no producers have been able to take advantage of this tool. No new biofuels producers have come online in areas that have met this quota.

Agriculture and Forestry Biofuel Production Grants
The Agriculture and Forestry Industries Development Fund provides grants to promote and develop the agriculture and forestry industry in Virginia and create or expand value-add facilities, including qualified biofuel production facilities. Individual grants may not exceed $250,000 or 25% of qualified capital expenditures and are awarded at the governor’s discretion. The grants are awarded to local governments and other Virginia political subdivisions working with qualified businesses. Terms and conditions apply, including the use of a minimum percentage of Virginia grown products, matching funds, and performance requirements. For more information, see the Virginia Department of Mines, Minerals and Energy website. (Reference Virginia Code 3.2-304)

This is a new program, and the administrators have not yet been able to document positive results.

Alternative Fuels Grants and Loans
The Alternative Fuels Revolving Fund is used to distribute loans and grants to municipal, county, and commonwealth government agencies to support alternative fuel vehicle (AFV) programs; pay for AFV maintenance, operation, evaluation, or testing; pay for vehicle conversions; or improve alternative fuel infrastructure. Eligible alternative fuels include electricity, hydrogen, and natural gas. Projects with a funding match are given priority in the evaluation process. (Reference Virginia Code 33.1-223.4 and 33.1-223.7)
This program has not been funded for grants or loans in recent years, and has not been able to support development. If funded, it is likely that this program would be an effective tool in facilitating a reduction in petroleum use by government fleets.

At the local level, the city of Charlottesville VA has recently instituted a mini-grant program that allocates $50,000 of an existing public green initiatives fund to businesses that install electric vehicle charging stations. The city council approved the measure in November 2013 (charlottesville.org/cityEVnetwork). Though the program is new, it is expected to boost the number of electric vehicle charging stations in the city, and by extension encourage broader PEV adoption by residents in and around the area.

**High Occupancy Vehicle (HOV) Lane Exemption**

Alternative fuel vehicles (AFVs) displaying the Virginia Clean Special Fuel license plate may use Virginia HOV lanes, regardless of the number of occupants. For HOV lanes serving the I-95/I-395 corridor, only registered vehicles displaying Clean Special Fuel license plates issued before July 1, 2006, are exempt from HOV lane requirements. For HOV lanes serving the I-66 corridor, only registered vehicles displaying Clean Special Fuel license plates issued before July 1, 2011, are exempt from HOV lane requirements. Eligible vehicles include dedicated AFVs and some hybrid electric vehicles; see the [Virginia Department of Motor Vehicles](http://www.dmv.virginia.gov) website for a complete list of qualifying vehicles. The annual fee for Clean Special Fuel license plates is $25 in addition to the prescribed fee for commonwealth license plates. (Reference [Virginia Code](http://www.vlaw.com) 33.1-46.2 and 46.2-749.3)

This program has been very successful in advancing hybrid vehicle ownership, in cleaning the air, and in using appropriate capacity with HOV lanes in the Commonwealth. However, this program does not allow newer hybrid vehicles or electric vehicles registered after July 2011 to receive significant benefit, which will limit its future value.

**Alternative Fuel Vehicle (AFV) and Fueling Infrastructure Loans**

The Virginia Board of Education may use funding from the Literary Fund to provide loans to school boards that convert school buses to operate on alternative fuels or construct alternative fueling stations. (Reference [Virginia Code](http://www.vlaw.com) 22.1-146)

**Ethanol Production Equipment Tax Exemption**

A county, city, or town may exempt, partially exempt, or set a lower tax rate for qualified equipment used by farmers or farm cooperatives to produce ethanol, provided that the ethanol feedstock consists primarily of farm products. (Reference [Virginia Code](http://www.vlaw.com) 58.1-3505)

**Alternative Fuel and Hybrid Electric Vehicle (HEV) Emissions Testing Exemption**

The Virginia emissions inspection program, which requires biennial inspections of motor vehicles, does not apply to vehicles powered by compressed or liquefied natural gas, liquefied petroleum gas (propane), hydrogen, a combination of compressed natural gas and hydrogen, or electricity. Qualified HEVs with U.S. Environmental Protection Agency fuel economy ratings of at least 50 miles per gallon (city) are also exempt from the emissions inspection program unless remote sensing devices indicate the HEV may not meet current emissions standards. For more information, see the [Virginia Department](http://www.dmv.virginia.gov)
Idle Reduction Weight Exemption
Any motor vehicle equipped with an auxiliary power unit or other idle reduction technology may exceed the gross, single axle, tandem axle, or bridge formula weight limits by up to 400 pounds (550 pounds, effective July 1, 2013) to compensate for the added weight of the idle reduction technology. (Reference House Bill 1985, 2013, and Virginia Code 46.2-1129.1)

Alternative Fuel Vehicle (AFV) Tax Exemption
Alternative fuel is exempt from taxes if it is sold to a government entity for its exclusive use, sold to a nonprofit charitable organization for the purpose of providing charitable services for low-income medical patients, or produced by an agricultural operator and used exclusively for farm use or vehicles of that operator. (Reference Virginia Code 58.1-2250)

Alternative Fuel Vehicle (AFV) Conversion Fund (loan)
The AFV Conversion Fund (Fund) is created to assist commonwealth agencies with the incremental cost of commonwealth-owned AFVs, both original equipment manufacturer vehicles and aftermarket conversions. Funding may be used in conjunction with or as matching funds for any eligible federal grants for the same purpose. The Virginia Department of General Services and the Department of Mines, Minerals and Energy must establish guidelines for contributions and reimbursements from the Fund for the purchase or conversion of commonwealth-owned vehicles. The Fund will include appropriations from the Virginia General Assembly as well as donations, grants, in-kind contributions, and other funding. For more information, see the Virginia Department of General Services website. (Reference Virginia Code 2.2-1176.1)

There have been no loans requested or issued thus far, largely because they haven't been needed. The Alternative Fuel Program (see below) resulted in CNG and LPG being added to the state contract (including vehicle conversion, fueling infrastructure, and the fuel itself). Thus far, fleets have been able to use already budgeted funds to pay for alternative fuel vehicle conversion kits. It is expected that as fleets look to budget future funds for vehicle and fuel purchases, they will likely take advantage of this program. Contact: Mike Bisogno, Department of General Services, Office of Fleet Management Services, michael.bisogno@dgs.virginia.gov

Authorization for Plug-In Electric Vehicle Charging Rate Incentives
The Virginia State Corporation Commission (SCC) directs public utilities to evaluate time-differentiated rates and other incentives to encourage off-peak all-electric (EV) and plug-in hybrid electric vehicle charging. The SCC may authorize public utilities to conduct pilot programs to determine the feasibility and implications of offering off-peak rates and other incentives. Pilot programs may include voluntary load control options, rate structures with financial incentives, rebates, or other incentives that offset the cost of purchasing or installing electric vehicle supply equipment for users who elect off-peak rate structures. An electric utility that participates in an approved pilot program may be entitled to recover annually the costs of its participation in any pilot program conducted on or after January 1, 2011. (Reference House Bill 2105, 2011)

Plug-In Electric Vehicle (PEV) Charging Rate Reduction - Virginia Dominion Power
allows PEV owners to take advantage of lower rates during off-peak hours. Under this plan, customers must install an additional meter specifically for their electric vehicle supply equipment (EVSE); Dominion will provide this meter at no charge. The Electric Vehicle + Home Pricing Plan is a whole-house pricing plan in which the customer's EVSE is treated as another appliance. Dominion will provide a new meter at no charge to record energy usage in 30-minute intervals, allowing Dominion to apply pricing based on time of day and encourage customers to charge their PEV during off-peak hours as much as possible. PEV pricing plans are expected to expire on November 30, 2014. For more information, see the Virginia Dominion Plug-In Electric Vehicles website.

The original pilot rate project was expected to expire on December 1, 2013, but due to “increasing customer interest in alternative fuel vehicle technologies” Dominion requested and received approval to extend the pilot to November 2014. Dominion anticipates that “the adoption rate of electric vehicles in Virginia will continue to grow dramatically” (https://www.dom.com/about/environment/electric-vehicles.jsp). As of October 31, 2013 there were 199 customers opting for the “whole house EV time of use” rate, and 48 customers signed up for the “EV-only time of use” rate. The utility has sought approval from the Virginia SCC to extend the pilot for an additional two years.

**Biodiesel and Green Diesel Fuel Use Requirement**

Commonwealth agencies and institutions must procure only diesel fuel containing at least 2% biodiesel (B2) or green diesel fuel for use in on-road diesel internal combustion engines; this requirement does not apply if supply is not readily available or the cost of the fuel exceeds the cost of conventional diesel by 5% or more. The Virginia Department of General Services must establish conditions under which commonwealth agencies and institutions may procure these blended fuels, taking into consideration the availability of the fuel and cost of biodiesel compared to diesel fuel. (Reference Virginia Code 2.2-1111 and Executive Order 19, 2010)

Now that up to 5% biodiesel can be blended with petroleum diesel without labeling or disclosure, it is difficult to track implementation of a lower blend requirement. In effect, fleets could potentially be complying with the requirement without trying or realizing it. However, according to the Virginia Clean Cities Coordinator, James Madison University and University of Virginia Facilities Department are the only Commonwealth agencies/institutions that report deliberate use of biodiesel blends.

**Alternative Fuel Research and Development Funding**

The Virginia Universities Clean Energy Development and Economic Stimulus Foundation will identify, obtain, disburse, and administer funding for alternative fuel and related technology research, development, and commercialization. The funds may be distributed as grants, loans, or through other methods. (Reference Virginia Code 23-300 through 23-303)

There has been no reported activity from this Foundation.

**Provision for Alternative Fuel Vehicle (AFV) Tax Reduction**

Local governments may reduce personal property taxes paid on AFVs, specifically vehicles that operate using natural gas, liquefied petroleum gas or propane, hydrogen, or electricity, including low-speed vehicles. (Reference Virginia Code 58.1-3506)

Arlington and Loudon Counties have reportedly adopted a reduced property tax rate for qualifying AFV owners.
Alternative Fuel Research and Development Funding
The Virginia Universities Clean Energy Development and Economic Stimulus Foundation will identify, obtain, disburse, and administer funding for alternative fuel and related technology research, development, and commercialization. The funds may be distributed as grants, loans, or through other methods. (Reference Virginia Code 23-300 through 23-303)

There has been no reported activity from this Foundation.

Alternative Fuel Program (not included in the AFDC website)
During the 2011 General Assembly, House Bill 2282 was passed directing the establishment of a plan providing for the replacement of state-owned or operated vehicles with vehicles that operate using alternative fuel, in order to support expansion of alternative fuel vehicle markets and to reduce Virginia’s dependence on foreign oil. To accomplish this, the Commonwealth worked through a Public-Private partnership (under the Public Private Education and Infrastructure Act, or PPEA), to investigate the feasibility of such a plan. As a result of the PPEA, contracts have been awarded to Clean Energy for a natural gas (CNG) solution and Blossman Gas for a propane autogas (LPG) solution. Both contracts include provisions for fueling infrastructure, statewide fuel pricing and vehicle conversions. For more information about this program, visit the VA Department of General Services site at: Office of Fleet Management Services.

This program was implemented in 2012, with the infrastructure piece added in 2013. Under this program there have been two natural gas fuel sites constructed (the ground-work for both had already been laid prior to this program being finalized), four natural gas vehicle conversions, one propane fuel site has been built, and two propane vehicle conversions have been completed. At least 20 more propane vehicles and three additional LPG stations are planned for early 2014, and additional CNG sites are being identified in conjunction with ‘anchor fleets’, suggesting this program is both popular and valuable. In addition to the state entities taking advantage of this program, local municipalities are also beginning to purchase from the participating alt fuel/vehicle contractors in increasing numbers. Contact: Mike Bisogno, Department of General Services, Office of Fleet Management Services, michael.bisogno@dgs.virginia.gov.

Idle Reduction Requirement
Motor vehicles licensed for commercial or public service may not idle for more than three minutes in commercial or residential urban areas, unless the engine is providing auxiliary power for purposes other than heating or air conditioning. Tour buses and diesel vehicles are not permitted to idle for more than 10 minutes. (Reference Virginia Administrative Code 9-5-40-5670(C))

Virginia Fuel-Efficient Driving Training
Commonwealth-approved driver education programs must include fuel-efficient driving practices as a curriculum component. (Reference Virginia Code 22.1-205)

The curriculum for this program is available online: http://www.doe.virginia.gov/instruction/driver_education/curriculum_admin_guide/
Alternative Fuel ‘Counter-Incentives’

Incentives do not make up the entire picture of how states approach alternative fuels – it is important to also consider taxes, fees, and rules that can make it more difficult and/or more expensive for fleets and individuals to use alternative fuels.

Tennessee and Virginia, in an effort to recoup some of the motor fuels taxes lost when alternative fuel is purchased versus gasoline or diesel, have implemented special taxes on propane and/or CNG sold for use in highway vehicles, a portion of which is dedicated to state transportation expenses.

- In Tennessee, a liquefied gas tax of $0.14 per gallon is imposed on LPG used for operating motor vehicles on public highways. Government agencies are exempt. (Reference Tennessee Code 67-3-1101, 67-3-1102, 67-3-1103, and 67-3-1106). Also in Tennessee, a $0.13 per gallon tax is imposed on CNG used for operating motor vehicles on public highways. Government agencies are exempt from this tax. (Reference Tennessee Code 67-3-1113 and 67-3-1114). (Tennessee’s gas tax is $0.214 per gallon).
- In Virginia, liquid alternative fuels used to operate on-road vehicles are taxed at a rate of $0.175 per gallon. These fuels are taxed at the same rate as gasoline and gasohol (3.5% of the statewide average wholesale price of a gallon of self-serve unleaded regular gasoline, effective July 1, 2013, Reference House Bill 2313, 2013, and Virginia Code 58.1-2217 and 58.1-2249).

Several states have imposed alternative fuel vehicle taxes and/or fees, or additional requirements on alternative fuel vehicle or fuel sales:

- Georgia requires a Compressed Natural Gas (CNG) Permit be issued by the Georgia Safety Fire Commissioner, with a one-time fee of $150, anyone dispensing CNG for use in vehicles. (Reference Georgia Code 25-2-4.1)
- North Carolina’s legislature passed a state appropriations bill in 2013 that imposes an additional $100 annual registration fee on plug-in electric vehicles that are not capable of using other energy sources (plug-in hybrids are not included) (Reference SB 402, Session Law 2013-360)
- Tennessee taxes vehicles that operate on LPG on a sliding scale based on vehicle weight, from $70 per year for passenger cars to $114 for vehicles over 26000 lbs. Government agencies are exempt. (Reference Tennessee Code 67-3-1101, 67-3-1102, 67-3-1103, and 67-3-1106)
- Also in Tennessee, CNG vehicle users must apply for and obtain a CNG user’s permit from the Tennessee Department of Revenue (Reference Tennessee Code 67-3-1113 and 67-3-1114), and CNG dealers must apply for and obtain a permit from the Tennessee Department of Revenue authorizing them to collect and remit taxes on CNG delivered to motor vehicles by means of a dispenser with meter capacity (Reference Senate Bill 2718, 2012, and Tennessee Code 67-3-1119 through 67-3-1120).
- Virginia’s Alternative Fuel Vehicle Tax charges owners of alternative fuel vehicles and hybrids $64 per vehicle per year (annual license tax, some exceptions apply, Reference House Bill 2313, 2013, and Virginia Code 58.1-2217 and 58.1-2249).