

**APPENDIX N:  
INVENTORY OF EXISTING RELEVANT STATE AND FEDERAL POLICIES**

**RENEWABLE FUELS ROADMAP AND  
SUSTAINABLE BIOMASS FEEDSTOCK SUPPLY FOR NEW YORK  
Final Report**

Submitted to  
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## **ABSTRACT**

Appendix N represents an inventory of local, state, federal, regional and international policy measures undertaken that address biofuels. While the major focus is on New York policy measures, ten other states considered to be leaders in terms of biofuels policy were examined in order to gain perspective on how other parts of the country are choosing to manage biofuels policy.

## **ACKNOWLEDGEMENTS**

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## 1 INTRODUCTION

The incentives, laws and programs included in this Appendix form a compilation of existing policy levers<sup>1</sup> from four distinct categories: federal, New York, other leading states, and international/regional. The purpose of this compilation is to supplement Appendix M of the New York Biofuels Roadmap. Appendix O also contains more information on state and regional biofuels initiatives. Unless otherwise specified, the policies found herein have been taken or adapted from the Department of Energy's (DOE) Alternative Fuels and Advanced Vehicles Data Center.<sup>2</sup> Specifically, Sections 2-4 contain materials derived from this DOE source unless otherwise noted, and Section 5 contains policies that have unique sources. **It should be noted that the individual state policies are current as of Spring 2009; significant federal and regional initiatives have been updated since that time.**

**Federal Levers:** The development of the renewable fuels industry is heavily influenced by federal incentives and policy mandates. This section begins with a review of the latest developments at the federal level, including some notable Supreme Court decisions. Next follows a review of existing policies and a discussion of those now under consideration, which may critically affect industry development.

**New York Levers:** This section identifies existing New York state policy levers that may be applied to promote the industry at all the stages of the supply chain. Included are those outside the purview of "traditional" biofuels incentives, such as general economic development grants.

**Other Leading State Levers:** This section documents the toolkit of policy incentives specific for biofuels that ten leading states are using to promote the development of the biofuels industry through the whole chain of feedstock production, feedstock distribution, refining, blending and retailing to the consumer. These states are: California, Iowa, Kentucky, Massachusetts, Michigan, Ohio, Pennsylvania, Tennessee, Texas and Vermont. The toolkit will include regulatory mandates, financial incentives and other appropriate policy measures.

**International/Regional Levers:** This section documents relevant international policy incentives and laws, focusing particularly on Canada and regional compacts including the Regional Greenhouse Gas Initiative (RGGI).

### 1.1 SUMMARY

While there are many innovative policies being implemented at the state, regional and federal levels, there are certain examples that warrant special attention. In addition to funding The New York State Energy Research and Development Authority (NYSERDA) has provided for alternative fuels, New York City has introduced legislation requiring improvements in fuel economy as well as alternative fuel use requirements. The State has also established a Climate Action Council (CAC) which is currently assessing how New York can best address climate change by examining how "all economic sectors can reduce greenhouse gas (GHG) emissions and adapt to climate change."<sup>3</sup> California's Low Carbon Fuel Standard requires a 10% reduction in the carbon content of fuels sold in the state by 2020. The Governor's Office of Energy Policy (OEP) in Kentucky is focusing on developing a strategy for the production of alternative transportation fuels and synthetic natural gas from fossil energy resources and biomass resources, including biodiesel and ethanol. The Vermont Department of Agriculture, Food and Markets is developing an economic initiative to provide assistance for research and planning to aid farmers in developing business enterprises that harvest biomass, convert biomass to energy, or produce biofuels such as biodiesel and ethanol. There are also several types of incentives that have been widely implemented. For example, California, Iowa, Michigan, Ohio, Tennessee, and New York have all provided for alternative fuel fueling infrastructure grants. Further, California, Ohio, Pennsylvania, Michigan, New York, Iowa, Vermont, Massachusetts, Tennessee and Kentucky have all implemented vehicle acquisition and alternative fuel use requirements for state vehicles.

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<sup>1</sup> A policy lever is a measure intended to induce a change in behavior in order to accomplish a particular goal.

<sup>2</sup> Department of Energy's Alternative Fuels and Advanced Vehicles Data Center, [http://www.afdc.energy.gov/afdc/incentives\\_laws.html](http://www.afdc.energy.gov/afdc/incentives_laws.html).

<sup>3</sup> New York State Climate Action Council, <http://www.nyclimatechange.us/index.cfm>.

At the regional level, Michigan and Ohio have joined Indiana, Iowa, Kansas, Minnesota, South Dakota, and Wisconsin in adopting the Energy Security and Climate Stewardship Platform Plan designed to promote the use of biofuels in the region. New York, Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, Rhode Island and Vermont also participate in the Regional Greenhouse Gas Initiative (RGGI), which facilitates the trading of carbon emission allowances in order to reduce greenhouse gas emissions.

Federally, the Energy Independence and Security Act (EISA) of 2007 requires the national supply of renewable fuels, such as cellulosic biofuels and biomass-based diesel, to reach 36 billion gallons by 2022. Under the American Reinvestment and Recovery Act (ARRA) of 2009, \$16.8 billion in funding was given to the DOE's Office of Energy Efficiency and Renewable Energy (EERE) to support alternative fuel and advanced vehicle technology grant programs, research and development initiatives, and fleet improvement efforts. The U.S. Environmental Protection Agency (EPA) has finalized regulations implementing the National Renewable Fuel Standard Program (RFS) for 2010 and beyond (RFS2), establishing specific annual volume standards for cellulosic biofuel, biomass-based diesel, advanced biofuel, and total renewable fuel that must be blended into transportation fuel each year.

## **1.2 GRAPHICAL ANALYSES OF CURRENT INCENTIVES, LAWS AND PROGRAMS**

The following four graphs created by Caley Johnson at the National Renewable Energy Laboratory summarize the current and historical trends in policy.<sup>4</sup> When reviewing these graphs, however, it is important to keep in mind that the significance and size of these incentives are not reflected. A renewable fuel standard, for example, will have a greater impact than a small tax credit.<sup>5</sup> Reviewing the number of enactments, however, may still be useful in analyzing general trends in federal biofuels policy.

Generally speaking, policy has seen a shift toward energy independence and security, partially in response to high petroleum prices, by promoting alternative fuels such as biofuels.<sup>6</sup> Incentive legislation dramatically increased from 2005 through 2007. Although tax credits and similar incentives have played a significant role in promoting biofuels, the establishment of the renewable fuel standard has the potential to provide even greater support for biofuels.<sup>7</sup>

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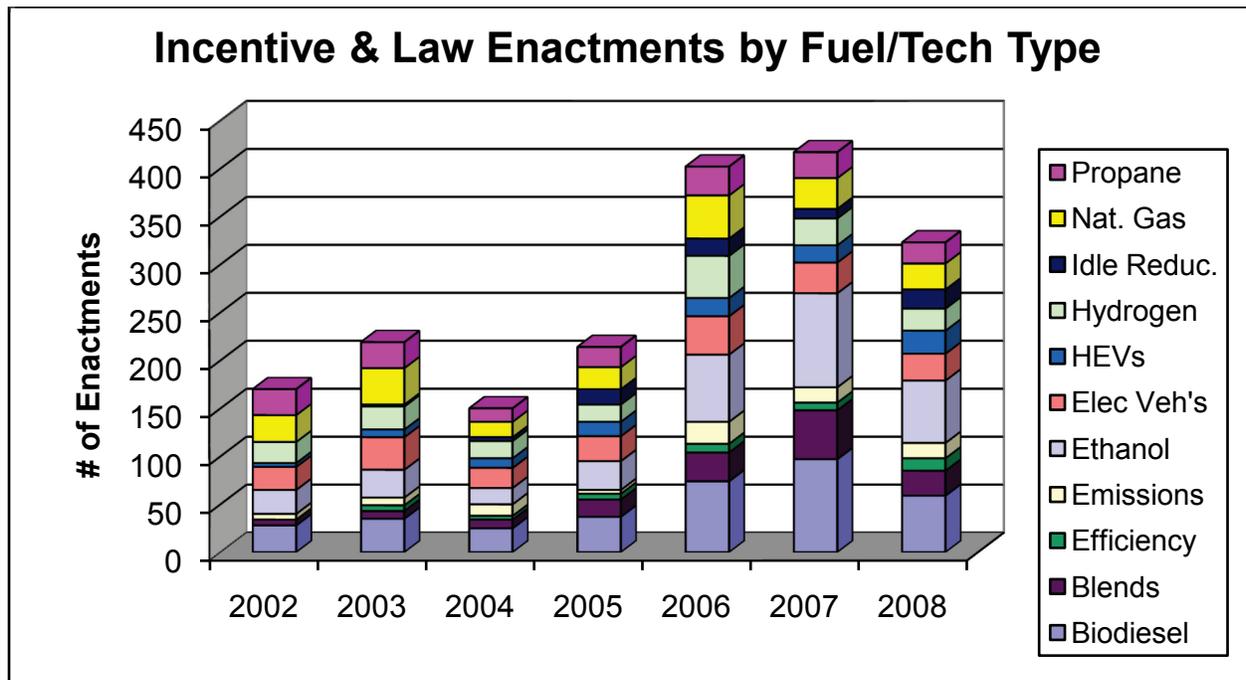
<sup>4</sup> For more information about the data, analysis, and trends presented in this section, please contact Caley Johnson at the National Renewable Energy Laboratory. [caley\\_johnson@nrel.gov](mailto:caley_johnson@nrel.gov). These graphs may be found at the Department of Energy Website at <http://www.afdc.energy.gov/afdc/data/laws.html>.

<sup>5</sup> James Wolf, personal communication February 2010.

<sup>6</sup> Biofuels Incentives: A Summary of Federal Programs, 2006, [http://lugar.senate.gov/energy/links/pdf/Biofuels\\_Incentives.pdf](http://lugar.senate.gov/energy/links/pdf/Biofuels_Incentives.pdf).

<sup>7</sup> Biofuels Incentives: A Summary of Federal Programs, 2006, [http://lugar.senate.gov/energy/links/pdf/Biofuels\\_Incentives.pdf](http://lugar.senate.gov/energy/links/pdf/Biofuels_Incentives.pdf).

Figure N-1. Incentives/Laws by Fuel Type/Technology Type



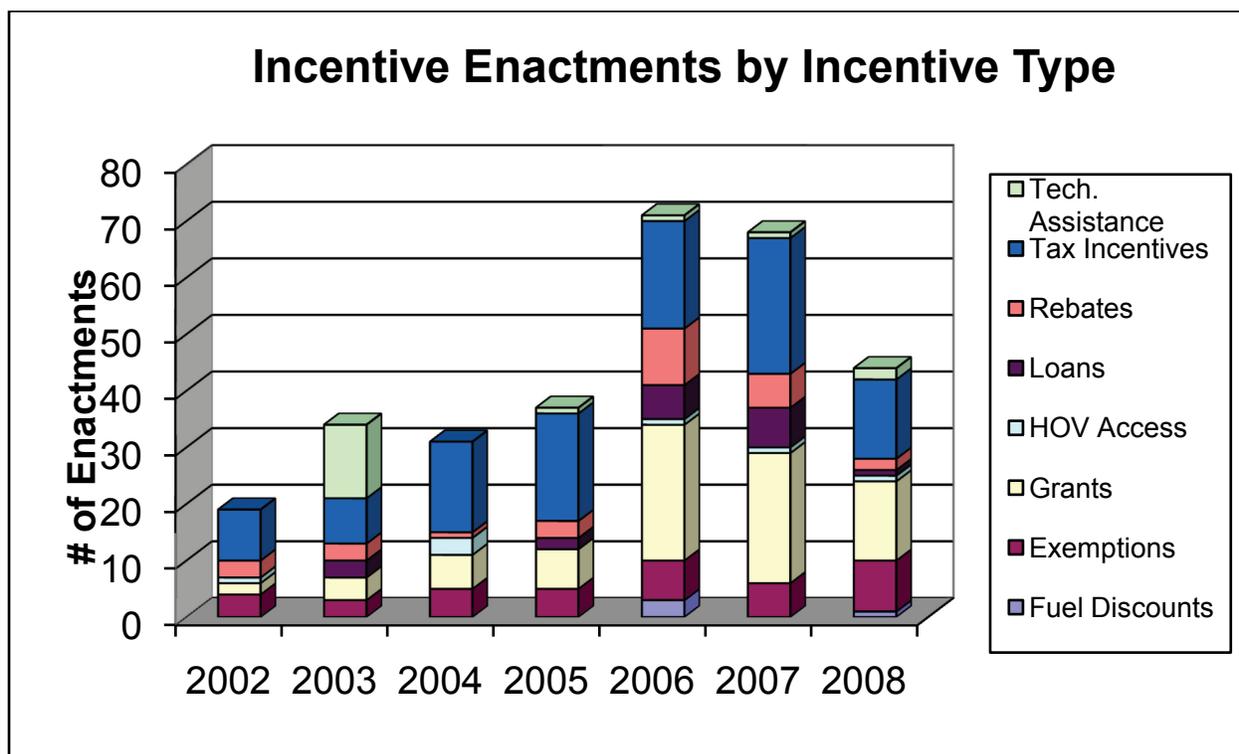
Incentives and Law Enactments by Fuel/Technology Type								
Tech Type	2002	2003	2004	2005	2006	2007	2008	Total
Biodiesel	28	35	25	37	74	97	59	355
Blends	6	8	9	18	30	51	26	148
Efficiency	0	6	4	6	9	8	13	46
Emissions	6	8	12	4	23	16	16	85
Ethanol	25	29	17	30	70	98	65	334
Electric Vehicles	24	34	21	26	40	32	28	205
Hybrid Electric Vehicles	4	8	10	15	19	18	24	98
Hydrogen	22	24	18	18	44	28	23	177
Idle Reduction		2	4	16	18	10	20	70
Natural Gas	28	38	16	23	45	32	27	209
Propane	27	27	14	21	30	27	22	168
<b>Total</b>	<b>170</b>	<b>219</b>	<b>150</b>	<b>214</b>	<b>402</b>	<b>417</b>	<b>323</b>	<b>1,895</b>

Data Source: DOE Alternative Fuels and Advanced Vehicles Data Center (AFDC) database query on April 9, 2009

Notes:

- Because a regulation may apply to more than one technology type, adding the totals for each row results in counting some regulations multiple times.
- Enactments mean any incentive or law that went into force, even if it is now expired.
- Numbers in the 2009 query changed slightly from its 2008 predecessor due to refinement in the database in incentives previously labeled as "all alternative fuels".
- Counts incentives and laws enacted by all 50 states and the District of Columbia.

Figure N-2. Incentive Enactments by Incentive Type



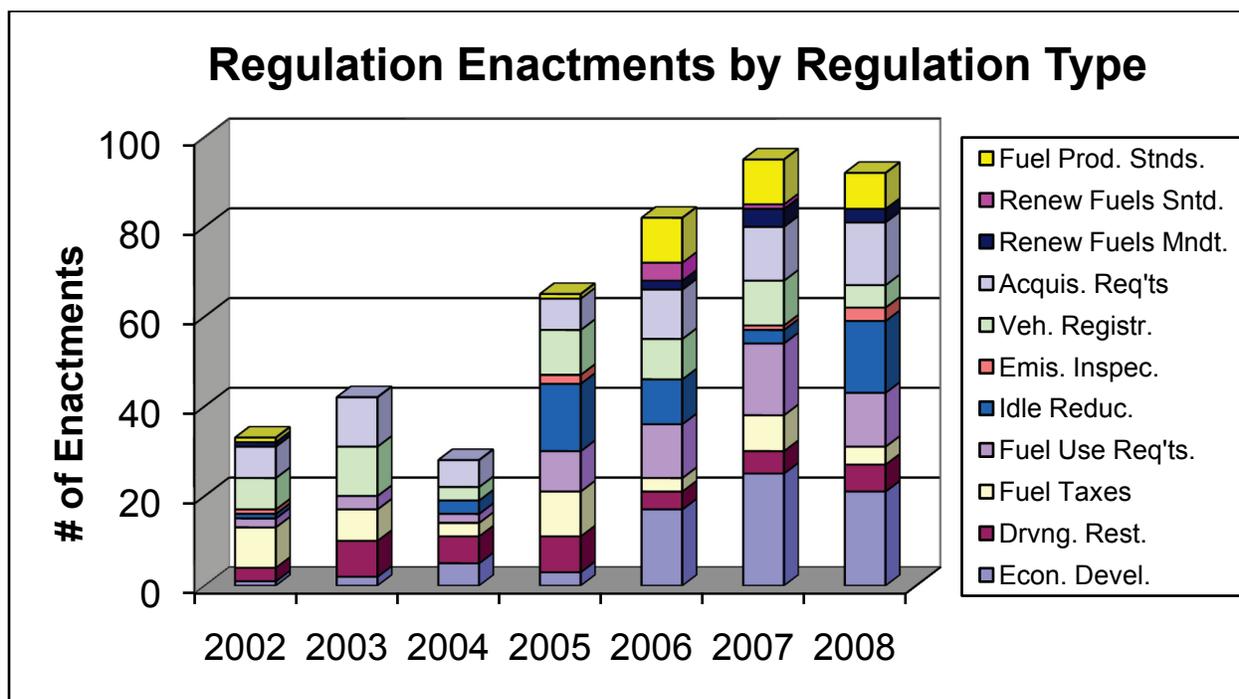
Incentive Enactments by Incentive Type								
Incentive Type	2002	2003	2004	2005	2006	2007	2008	Total*
Fuel Discounts					3		1	4
Exemptions	4	3	5	5	7	6	9	39
Grants	2	4	6	7	24	23	14	80
HOV Access	1		3		1	1	1	7
Loans		3		2	6	7	1	19
Rebates	3	3	1	3	10	6	2	28
Tax Incentives	9	8	16	19	19	24	14	109
Tech. Assistance		13		1	1	1	2	18
<b>Total</b>	<b>19</b>	<b>34</b>	<b>31</b>	<b>37</b>	<b>71</b>	<b>68</b>	<b>44</b>	<b>304</b>

Data Source: DOE Alternative Fuels and Advanced Vehicles Data Center (AFDC) database query on April 9, 2009

Notes:

- Because an incentive may apply to more than one incentive type, adding the totals for each row may result in counting some incentives multiple times.
- Enactments mean any incentive or law that went into force, even if it is now expired.
- Numbers in the 2009 query changed slightly from its 2008 predecessor due to refinement in the database in incentives previously labeled with multiple incentive types.
- Counts incentives and laws enacted by all 50 states and the District of Columbia.

Figure N-3. Regulation Enactments by Regulation Type



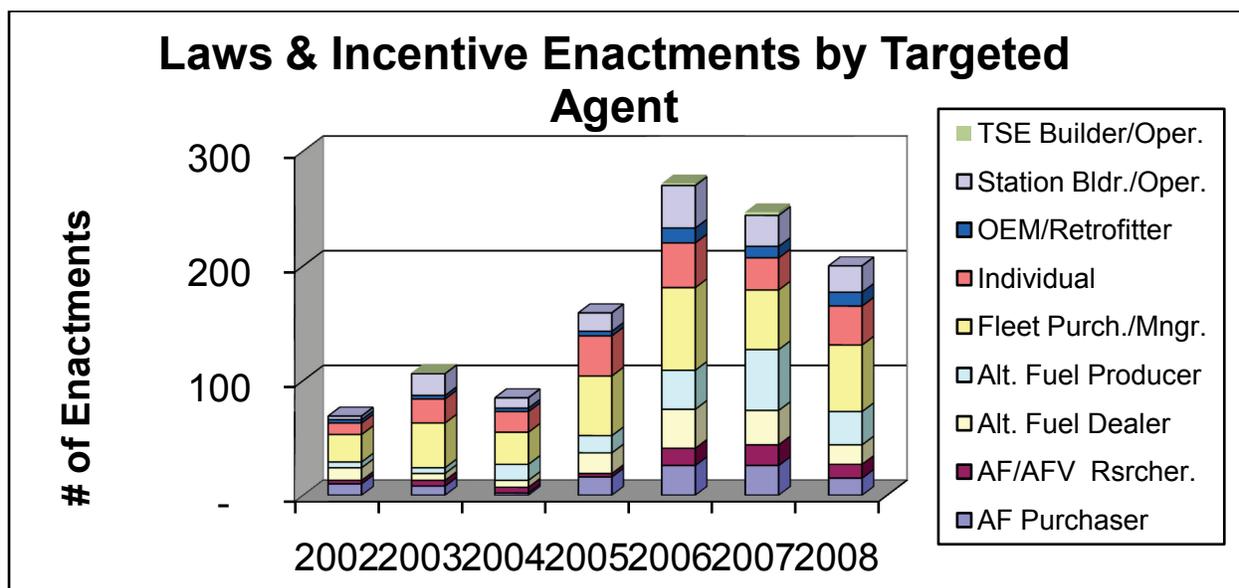
Regulation Enactments by Regulation Type								
Regulation Type	2002	2003	2004	2005	2006	2007	2008	Total*
Economic Development	1	2	5	3	17	25	21	74
Driving Restrictions	3	8	6	8	4	5	6	40
Fuel Taxes	9	7	3	10	3	8	4	44
Fuel Use Requirements	2	3	2	9	12	16	12	56
Idle Reduction	1		3	15	10	3	16	48
Emission Inspection	1			2		1	3	7
Vehicle Registration	7	11	3	10	9	10	5	55
Acquisition Requirements	7	11	6	7	11	12	14	68
Renewable Fuels Mandates	1				2	4	3	10
Renewable Fuels Standard					4	1		5
Fuel Production Standards	1			1	10	10	8	30
<b>Total</b>	<b>33</b>	<b>42</b>	<b>28</b>	<b>65</b>	<b>82</b>	<b>95</b>	<b>92</b>	<b>437</b>

Data Source: DOE Alternative Fuels and Advanced Vehicles Data Center (AFDC) database query on April 9, 2009

Notes:

- Because a regulation may apply to more than one regulation type, adding the totals for each row can result in counting some regulations multiple times.
- Enactments mean any incentive or law that went into force, even if it is now expired.
- Counts incentives and laws enacted by all 50 states and the District of Columbia.

Figure N-4. Incentives/Laws Enactments by Targeted Agent

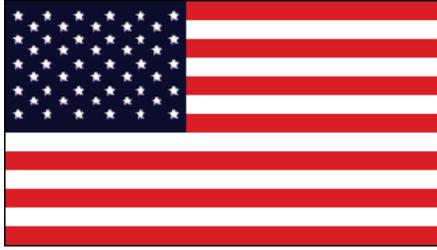


Incentive and Law Enactments by Targeted Agent								
User Type	2002	2003	2004	2005	2006	2007	2008	Total
Alternative Fuel Purchaser	10	8	2	16	26	26	15	146
Alternative Fuel/Alternative Fuel Vehicle Researcher.	3	5	5	3	15	18	12	73
Alternative Fuel Dealer	11	6	6	18	34	30	17	154
Alternative Fuel Producer	5	5	14	15	34	53	29	185
Fleet Purchasing/Manager	24	39	28	52	72	52	58	469
Individual	10	21	18	35	39	28	34	263
Original Equipment Manufacturer/Retrofitter	3	3	3	4	13	10	12	64
Station Builder/Operator	3	19	9	16	37	27	23	188
Truck Stop Electrification Builder/Operator		1			2	3		8
<b>Total</b>	<b>69</b>	<b>107</b>	<b>85</b>	<b>159</b>	<b>272</b>	<b>247</b>	<b>200</b>	<b>1,550</b>

Data Source: DOE Alternative Fuels and Advanced Vehicles Data Center (AFDC) database query on April 9, 2009

Notes:

- Because an incentive or law may apply to more than one targeted agent, adding the totals for each row results in counting some incentives and laws multiple times.
- Enactments mean any incentive or law that went into force, even if it is now expired.
- "Targeted Agent" means the person whose actions the incentive or law is intended to influence.
- Counts incentives and laws enacted by all 50 states and the District of Columbia.



## 2 FEDERAL LEVERS<sup>8</sup>

### 2.1 RECENT FEDERAL ACTIVITY

This list includes recent federal actions, such as Federal Register notices, rulemaking actions, agency directives and publicly-available agency communications, all of which are related to alternative fuels and vehicles, fuel blends, hybrid vehicles, and idle reduction and fuel economy measures. They appear in date order (the date on which the federal action occurred) beginning with the most recent.

#### *U.S. EPA Finalizes New Regulations for the National Renewable Fuel Standard Program*

February 3, 2010

The U.S. Environmental Protection Agency (EPA) has finalized regulations implementing the National Renewable Fuel Standard Program (RFS) for 2010 and beyond (RFS2), as required by the Energy Independence and Security Act of 2007. The new requirements establish specific annual volume standards for cellulosic biofuel, biomass-based diesel, advanced biofuel, and total renewable fuel that must be blended into transportation fuel each year. The 2010 RFS volume is set at 12.95 billion gallons, increasing to 36 billion gallons by 2022. With RFS2, each fuel category must meet specific greenhouse gas reduction standards, based on a lifecycle analysis, as compared to the petroleum fuels they displace.

#### *U.S. EPA Finds that Combined Emissions from Vehicles Contribute to GHG Pollution*

December 7, 2009

EPA Administrator Lisa Jackson signed a Cause or Contribute Finding that confirms that the combined emissions of greenhouse gases (GHGs) from new motor vehicles and new motor vehicle engines contribute to GHG pollution. The Administrator has also signed an Endangerment Finding, which determines that the current and projected concentrations of six GHGs, including carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride, are a threat to the public health and welfare of current and future generations. The findings are based on the thorough examination of scientific evidence as well as a review of comments received during a 60-day public comment period. The findings on their own do not impose any emission reduction requirements, but rather, allow the EPA to finalize the GHG standards for new light-duty vehicles, which were jointly proposed by the EPA and the U.S. Department of Transportation's National Highway Traffic Safety Administration (NHTSA) earlier this year.

#### *U.S. EPA Responds to Ethanol Waiver Request*

December 1, 2009

The EPA has responded to a biofuels industry request to allow for the use of up to 15% ethanol in conventional gasoline. EPA announced that although not all studies have been completed, the current data indicates that 2001 and newer model year vehicles will likely be able to accommodate higher ethanol blends. In March 2009, Growth Energy, a biofuels industry group, requested a waiver to increase the ethanol content in conventional gasoline from 10 to 15%. EPA has been evaluating the request and has received public comments as part of its rulemaking process. The EPA and the DOE have also undertaken a number of studies to determine whether vehicles can operate on

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<sup>8</sup> This section contains materials derived from the Department of Energy's (DOE) Alternative Fuels and Advanced Vehicles Data Center Website ([http://www.afdc.energy.gov/afdc/incentives\\_laws.html](http://www.afdc.energy.gov/afdc/incentives_laws.html)), unless otherwise noted.

higher ethanol blends without modification to the vehicles. The EPA's response to Growth Energy noted that the agency has also begun taking steps to address fuel pump labeling requirements should EPA approve the use of ethanol blends greater than 10%. The EPA expects to make a final determination in mid-2010, after additional studies have been completed.

*President Obama Signs Executive Order to Set Sustainability Goals for Federal Agencies*

October 5, 2009

President Obama has issued an Executive Order that requires each agency to establish a Strategic Sustainability Performance Plan, focusing on improvements in environmental, energy, and economic performance. Each agency will be required to measure, reduce, and report their GHG emissions, and establish an agency-wide GHG emissions reduction target for 2020 as compared to 2008 baseline emissions. Reductions will be achieved through a variety of measures including reduced petroleum consumption, use of alternative fuel vehicles (AFVs), and fleet optimization efforts. Federal fleets of 20 vehicles or more will be required to reduce petroleum consumption by a minimum of 2% per year through the end of fiscal year 2020 as compared to 2005 baseline usage. Within 180 days, the DOE, in coordination with the General Services Administration (GSA), will issue guidance on federal fleet management, addressing the acquisition of AFVs, use of alternative fuels, fuel economy improvements, fleet optimization, renewable fueling infrastructure, and other petroleum reduction strategies.

*U.S. EPA Releases Greenhouse Gas Reporting Rules*

September 22, 2009

The EPA has issued the Final Mandatory Reporting of Greenhouse Gases Rule, which will require mandatory reporting of GHG emissions from large sources in the U.S. Beginning on January 1, 2010, manufacturers of vehicles and engines, suppliers of fossil fuels or industrial GHGs, and facilities that emit at least 25,000 metric tons of GHGs per year will be required to submit annual reports to the EPA. Vehicle and engine manufacturers outside the light-duty sector will be required to report carbon dioxide emissions levels beginning with Model Year 2011 and other GHG emissions in subsequent model years. This includes heavy trucks, motorcycles, and non-road engines and equipment; requirements related to light-duty vehicles are not included in this rulemaking. The new reporting system covers approximately 85% of the nation's GHG emissions and will provide comprehensive data for analysis to help inform future policy decisions.

*U.S. EPA and U.S. DOT Issue Proposed Rule to Establish Federal Vehicle Standards*

September 15, 2009

The EPA and the NHTSA have issued a joint proposal to establish a national program consisting of new federal vehicle standards for GHG emissions and improved fuel economy. The standards would apply to Model Year 2012 through 2016 passenger cars, light-duty trucks, and medium-duty passenger vehicles, and are expected to increase average fuel economy by approximately 5% per year. The proposed standards would create the first federal limits on vehicle GHG emissions.

*American Clean Energy and Security Act (ACES) Placed on Senate Legislative Calendar<sup>9</sup>*

July 7, 2009

The American Clean Energy and Security Act (also known as ACES or the Waxman-Markey Bill) is primarily known for its carbon cap-and-trade provisions. However, it addresses biofuels in several ways. Under the Combined Efficiency and Renewable Electricity Standard, "renewable biomass, biogas and biofuels derived exclusively from renewable biomass" qualify as sources of renewable electricity. In order to accommodate the proposed renewable fuels standard, it amends the Clean Air Act "by expanding the amount of biomass from forested land that could be used to produce fuels under such standard and eliminating the requirement that feedstock crops come from previously cultivated land." ACES requires that a National Bioenergy Partnership be established "to provide coordination among programs that support the institutional and physical infrastructure necessary to promote the deployment of sustainable biomass fuels and bioenergy technologies for the United States." ACES goes into detail on the establishment of a framework for allowing certain agricultural and forest resources to be used as offsets under a cap-and-trade program. The EPA Administrator and the Secretary of Agriculture are required to perform a study analyzing indirect GHG emissions associated with transportation fuels, and they must examine the issue of emissions resulting from indirect land use change as well.

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<sup>9</sup> Based on summary provided by the Library of Congress, <http://thomas.loc.gov/cgi-bin/bdquery/z?d111:HR02454:@@D&summ2=m&>.

*U.S. EPA Grants California Vehicle Emissions Waiver Request*

June 30, 2009

The EPA has granted California a vehicle emissions waiver, which will allow the state to set standards to help control GHG emissions from motor vehicles beginning with the 2009 model year. California first requested a waiver in December 2005, which was denied by the EPA in March 2008. In early 2009, the California Air Resources Board submitted a letter requesting that the EPA reconsider the waiver denial. Soon after, President Obama directed EPA to revisit the waiver request via a Presidential Memorandum. The EPA re-opened a written comment period and held a public hearing to do so. Based on the review of statutory language, legislative history, comments received, and technological considerations concerning lead time and implementation costs, EPA determined that a waiver should be granted. This decision is consistent with the EPA's traditional interpretation of the Clean Air Act, which gives the EPA the authority to allow California to adopt its own emission standards for new vehicles due to the severity of the state's air pollution challenges. Once new federal vehicle standards for fuel efficiency and GHGs take effect, California has committed to allow automakers that show compliance with the national standards to also be deemed in compliance with state requirements.

On February 6, 2009, the EPA announced it would reconsider its decision that denied California permission to set standards controlling greenhouse gases from motor vehicles. As part of this process, the EPA re-opened a written comment period and held a public hearing in March. The announcement stems from a letter the EPA received on January 21, 2009, from California outlining several issues for Administrator Lisa Jackson to review and reconsider regarding the EPA's previous denial of a waiver request. Shortly thereafter, President Obama directed the EPA to revisit the waiver request via a Presidential Memorandum.

*U.S. DOT to Implement Car Allowance Rebate System*

June 24, 2009

President Obama has enacted the Consumer Assistance to Recycle and Save Act of 2009, which establishes an incentive program to encourage consumers to trade in older, less fuel efficient cars and trucks for newer, more fuel efficient vehicles. The NHTSA will implement the voluntary Car Allowance Rebate System (CARS) program. Consumers may receive \$3,500 or \$4,500 toward the purchase or lease of a new vehicle at a participating dealership. The incentive amount depends on the type of vehicle purchased and the improvement in fuel economy of the purchase vehicle as compared to the trade-in vehicle. In general, trade-in vehicles must have a combined city/highway fuel economy rating of 18 miles per gallon (mpg) or less and must be in drivable condition, less than 25 years old, and registered and insured for the full year prior to trade-in. For passenger vehicles, the purchase vehicle must be at least 4 mpg more fuel efficient than the trade-in vehicle. For vans, sport utility vehicles, and pickups, the purchase vehicle must be at least 2 mpg more fuel efficient. The NHTSA was to publish rules for the program within 30 days of enactment and the program was to end either on November 1, 2009 or when DOT exhausts the funds set aside for the program, whichever comes first.

*U.S. EPA and U.S. DOT Announce Upcoming Joint Rulemaking to Establish Federal Vehicle Standards*

May 22, 2009

The EPA and the NHTSA, on behalf of the DOT, have issued a Notice of Upcoming Joint Rulemaking to establish federal vehicle GHG emission and fuel economy standards. This action follows President Obama's announcement of a national policy to reduce GHG emissions and increase fuel economy for new passenger cars, light-duty-trucks, and medium-duty passenger vehicles sold in the U.S. As the EPA is responsible for regulating air pollution under the Clean Air Act (CAA) and NHTSA is responsible for regulating Corporate Average Fuel Economy (CAFE) standards, the two agencies will work in coordination to propose standards for GHG emissions and fuel economy, respectively. The standards will apply to Model Years 2012 through 2016 and will take into account the expected cost and commercial availability of new technologies.

*Obama Administration Announces New Fuel Economy Standard*

May 19, 2009

The Obama administration announced that automakers must meet an average U.S. fuel-economy standard of 35.5 miles per gallon by 2016, matching the target set by California under a 2004 state law. This nationwide plan represents the first-ever U.S. limit on greenhouse-gas pollution from vehicles.<sup>10</sup>

It surpasses the 27.3 mpg that the U.S. Transportation Department in March said automakers would have to meet for their 2011 models. On March 27, 2009, the DOT issued a final rule establishing the average fuel economy standards for Model Year (MY) 2011 passenger cars and light trucks. The new standards would have raised the industry-wide combined average to 27.3 mpg as estimated by the National Highway Traffic Safety Administration. This would have resulted in an increase of 2 mpg over the 2010 model year average and would have saved an estimated 887 million gallons of fuel and reduced carbon dioxide emissions by 8.3 million metric tons. The MY 2011 standards would have used an attribute-based system, which sets fuel economy standards for individual vehicle models based on size. The DOT was working on a multi-year fuel economy plan to ensure that the industry-wide combined average of all new passenger cars and light trucks is not less than 35 miles per gallon by MY 2020. This plan included an evaluation of fuel saving technologies, market conditions, and future product plans from the manufacturers.

A law previously enacted by Congress in 2007 required automakers to raise fuel-economy standards by at least 40%, which would have forced them to meet a target of 35 mpg by 2020.<sup>11</sup>

*U.S. EPA Proposes Revised Renewable Fuel Standard Program Regulations*

May 5, 2009

The EPA has issued a Notice of Proposed Rulemaking for the Renewable Fuel Standard (RFS) program for 2010 and beyond (RFS2). The Energy Independence and Security Act of 2007 mandates a national supply of renewable fuels of 36 billion gallons by 2022, requiring a significant expansion of the current RFS (RFS1). The proposed revision to the RFS1 program specifies the volume of cellulosic biofuel and biomass-based diesel that must be used in transportation fuel each year. The program classifies these fuels as advanced biofuels, which are defined as fuels other than corn-based ethanol that produce half the greenhouse gas emissions of the fuel they replace. Once the RFS2 program is implemented, the EPA expects to conduct an annual notice-and-comment rulemaking process in order to determine the appropriate standards applicable in the following year.

*U.S. EPA Considers Clean Air Act Waiver Applications to Increase the Allowable Ethanol Content of Gasoline to 15 Percent; and Requests Comments*

April 16, 2009

The EPA is considering applications seeking to waive the provision prohibiting the introduction of certain fuels and fuel additives into commerce (specific fuels and additives are set forth in section 211(f) of the Clean Air Act and 40 CFR Part 79). Currently, the general limit on blending ethanol into gasoline is E10, meaning that gasoline may not contain more than a 10% blend. An application filed on March 6, 2009, by Growth Energy and 54 ethanol manufacturers attempts to increase the allowable amount of ethanol in motor vehicle gasoline up to 15% (E15). EPA has established a public docket for the first application filed under Docket ID No. EPA-HQ-OAR-2009-0211. The EPA Administrator has 270 days to respond to the application.

*U.S. EPA Releases Proposed Greenhouse Gas Reporting Rules*

March 10, 2009

The EPA has issued a proposed rule requiring mandatory reporting of GHG emissions from large sources in the U.S. that emit at least 25,000 metric tons of carbon dioxide equivalent per year. Under the proposal, manufacturers of motor vehicles and engines would be required to report GHG emission rates of new vehicles and engines beginning with Model Year 2011. Reporting would take place at the same time and use the same process currently followed for criteria pollutant emission certification and, where appropriate, fuel economy reporting. The purpose of the rule is to collect comprehensive and accurate data on GHG emissions that can be used to inform future policy decisions. EPA expects that the rule will cover 85-90% of total national GHG emissions.

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<sup>10,10</sup> J. Hughes and K. Chipman, Obama Speeds Fuel-Economy Standard, Sets Carbon Limit (Update1), Bloomberg News, <http://www.bloomberg.com/apps/news?pid=20601170&refer=home&sid=aKUXiuTCkyhw>.

*American Recovery and Reinvestment Act of 2009*

February 17, 2009

President Obama signed the American Recovery and Reinvestment Act (ARRA) of 2009 (Public Law 111-5), which directs nearly \$800 billion toward the creation of jobs, economic growth, tax relief, improvements in education and healthcare, infrastructure modernization, and investments in energy independence and renewable energy technologies. Specifically, the ARRA provides \$16.8 billion for the DOE's Office of Energy Efficiency and Renewable Energy (EERE). This funding will support a variety of alternative fuel and advanced vehicle technology grant programs, research and development initiatives, and fleet improvement efforts. The ARRA also expands the existing tax credits for installing alternative fuel infrastructure and purchasing plug-in electric vehicles, and provides additional funding for the Advanced Technology Vehicle Manufacturing Loan Program. The complete legislation can be viewed on the Library of Congress Web site.

*President Bush Enacts Energy Improvement and Extension Act of 2008*

October 3, 2008

The Emergency Economic Stabilization Act (House Resolution 1424) was signed by President Bush, enacting the Energy Improvement and Extension Act of 2008. The bill amends and extends existing biodiesel blending and production tax credits, extends existing alternative fuel excise tax credit, and extends the alternative fueling infrastructure tax credit. The bill also creates a new tax incentive toward the purchase of qualified plug-in hybrid electric vehicles based on vehicle weight and battery capacity. Additionally, qualified idle reduction devices are exempt from heavy-duty truck retail excise taxes.

*U.S. EPA Proposed Rule for the Renewable Fuel Standard Withdrawn*

October 2, 2008

Under the Energy Independence and Security Act (EISA) of 2007, which amended the Clean Air Act, the EPA Administrator is required to quantify Indirect Land Use Change (ILUC) impacts that may occur over the entire "lifespan" of the production of a certain fuel source. Under the Bush administration, Administrator Johnson announced a proposed rule with a modified standard for renewable fuels increasing the national requirement to 9.0 billion gallons in 2008 and rising to 36 billion gallons by 2022. Of the latter total, 21 billion gallons was required to be obtained from advanced biofuels (defined as cellulosic ethanol and other biofuels derived from feedstock other than corn starch). Starting in 2016, the total increase in the RFS target was to be met with advanced biofuels, and explicit standards for cellulosic biofuels and biomass-based diesel were established. Renewable fuels produced from new biorefineries were to be reduced by at least 20% the life cycle GHG emissions relative to life cycle emissions from gasoline and diesel. However, because of adverse comment, the EPA withdrew the amendments to 40 CFR 80.1129(b)(1), 80.1129(b)(4), 80.1129(b)(8), 80.1131(a)(8), and 80.1131(b)(4) published at 73 FR 57248 on October 2, 2008, effective November 26, 2008. As of April, 2009, the Obama administration is reviewing the withdrawn rule and has not yet announced a new proposed rule.

*U.S. Senate Designates National Alternative Fuel Vehicle Day*

September 24, 2008

The U.S. Senate agreed to Senate Resolution 665, designating October 3, 2008, as "National Alternative Fuel Vehicle Day." National Alternative Fuel Vehicle Day is intended to promote programs and activities that will lead to the greater use of cleaner, more efficient vehicles and transportation fuels. The U.S. Senate urges Americans to increase their personal and commercial use of alternative fuels and advanced technology vehicles; to promote public sector adoption of alternative fuels and advanced technology vehicles; and to encourage the enactment of federal policies to reduce the dependence of the nation on foreign oil through the advancement and adoption of alternative, advanced, and emerging vehicle and fuel technologies.

*Texas Renewable Fuels Standard Waiver Request Denied by EPA*

August 7, 2008

The EPA denied a request made by Texas Governor Rick Perry to waive 50% of the RFS mandate for the production of ethanol from grain. According to EPA, the waiver request failed to sufficiently demonstrate that implementation of the RFS during the time period at issue (September 1, 2008, through August 31, 2009) would severely harm the state, regional, or U.S. economy. As a result of this action, the total mandated renewable fuel volumes to be blended into transportation fuels sold in the U.S. remained at 9 billion gallons for 2008 and 11.1 billion gallons for 2009.

*Congress Passes Food, Conservation, and Energy Act of 2008 (Farm Bill)*

May 22, 2008

In May, Congress overrode a presidential veto to pass the Food, Conservation, and Energy Act of 2008 (House Resolution 2419), which provides funding for commodity, rural development, conservation, and energy programs. The bill includes language that authorizes \$1 billion in funds for renewable energy programs and new feedstock production, and reauthorizes many 2002 Farm Bill programs, including the Biomass Research and Development Initiative, the Biobased Products and Bioenergy Program, and a biodiesel education program. The bill also allows for a cellulosic biofuel production credit.

*IRS Updates Alternative Fuel Excise Tax Forms*

May 12, 2008

The Internal Revenue Service (IRS) has updated several tax forms used to claim the Alternative Fuel Excise Tax Credit. As a result of these updates, taxpayers claiming a rebate or payment for the \$0.50 per gallon credit must file Form 8849, Schedule 3. Additionally, corporations and businesses may use Form 8849, Schedule 3 to claim a quarterly credit instead of using Form 4136 to claim an annual credit. According to the IRS, claimants intending to file Form 8849, Schedule 3 must file no later than the end of the quarter following the quarter in which the fuel was used or sold.

*U.S. DOT Releases Proposed CAFE Regulations*

April 22, 2008

The National Highway Transportation Safety Administration (NHTSA) released a Notice of Proposed Rulemaking that calls for a substantial increase in the Corporate Average Fuel Economy (CAFE) standards for passenger cars and light trucks manufactured in Model Years (MY) 2011-2015. The proposed rulemaking raises required average fuel economy to 35.7 miles per gallon (mpg) for passenger cars and 28.6 mpg for light trucks, for an estimated industry-wide average fuel economy of 31.6 mpg by MY 2015. The proposed regulations are expected to increase energy security, address climate change by reducing carbon dioxide tailpipe emissions, increase the applicable life of fleet credits from three to five years, and allow credit trading between vehicle classes and among manufacturers. The national fuel economy standard passed by the Obama administration in May 2009 surpasses this action, however.

*U.S. EPA Raises the Renewable Fuels Standard for 2008*

February 7, 2008

In response to the Energy Independence and Security Act (EISA) of 2007 signed into law by President Bush in December 2007, the EPA has subsequently increased the 2008 Renewable Fuels Standard (RFS) to 7.76% in order to meet the new requirement that all transportation fuels sold contain a minimum of 9 billion gallons of renewable fuel in 2008, as set by the EISA. To determine these volumes, the EPA calculates the percentage-based standard annually, which applies to refiners, importers, and non-oxygenate blenders of gasoline. The new RFS supersedes the 2008 RFS that EPA published in November 2007, prior to the enactment of the EISA. The EISA requires an increase in the overall volume of renewable fuels that must be blended into transportation fuels each year, increasing to 36 billion gallons per year by 2022. In addition, beginning in 2013, a certain percentage of the renewable fuels must be advanced and/or cellulosic based biofuels and biomass-based diesel.

*Appropriations Act Boosts U.S. DOE Funding for Renewable Energy and Energy Efficiency*

December 27, 2007

President Bush approved an omnibus appropriations act that provides a 17% increase in funds for the DOE's Office of Energy Efficiency and Renewable Energy (EERE). The act appropriated nearly \$1.74 billion for EERE, an increase of more than \$250 million above the \$1.474 billion that was included in a continuing resolution approved in February 2007. The appropriations act did not provide a breakdown of the funds by program, but it did mandate that any change in program implementation be submitted for congressional approval as part of DOE's budget submission. The appropriations act also provided \$5.45 million for the administration of DOE's Innovative Technology Loan Guarantee Program.

*U.S. EPA Denies California Vehicle Emissions Waiver Request*

December 19, 2007

The EPA denied California's request for a waiver that would have allowed the state to implement its greenhouse gas emissions standards for motor vehicles. In explaining his decision, EPA Administrator Stephen Johnson stated that the recently-enacted Energy Independence and Security Act of 2007 establishes a national vehicle efficiency standard of 35 miles per gallon by 2020 and that this unified standard is preferable to a state-by-state approach. California's current waiver request is distinct from all prior requests in that previous waiver petitions covered pollutants that predominantly impacted local and regional air quality.

*Energy Independence and Security Act of 2007 Signed Into Law*

December 19, 2007

President Bush signed the Energy Independence and Security Act (EISA) of 2007 (House Resolution 6), designed to improve vehicle fuel economy and help reduce U.S. dependence on oil. EISA aims to increase the supply of alternative fuel sources by setting a mandatory Renewable Fuel Standard (RFS) requiring transportation fuel sold in the U.S. to contain a minimum of 36 billion gallons of renewable fuels by 2022, including advanced and cellulosic biofuels and biomass-based diesel. In addition, the law requires the CAFE standard to reach 35 miles per gallon by the year 2020. The EISA is projected to reduce energy consumption by 7% and greenhouse gas emissions by 9% by 2030.

*Federal Court Upholds California's Vehicle Emissions Standards*

December 12, 2007

A U.S. District Court ruled against a group of automobile manufacturers challenging California's authority to set and implement greenhouse gas emissions standards for motor vehicles. The auto industry had argued that the state's proposed regulations amount to setting fuel efficiency requirements for new vehicles, and that such efficiency standards can be set only by the federal government, specifically, the Department of Transportation's National Highway Traffic Safety Administration. A similar ruling was issued in September 2007 in Vermont against automobile industry plaintiffs challenging that state's authority to adopt California's vehicle emissions standards. California's proposed standards would be gradually phased in between Model Years (MY) 2009 and 2016, and would require approximately a 30% reduction of tailpipe greenhouse gas emissions from new motor vehicles by MY 2016.

*Ninth Circuit Court of Appeals Rules That NHTSA Must Set New Light Truck Emissions Standards*

November 15, 2007

The U.S. Court of Appeals for the Ninth Circuit rejected new fuel economy standards for light trucks, stating the NHTSA did not properly assess greenhouse gas emissions when it set new minimum fuel economy requirements for Model Years 2008 to 2011. The court ordered NHTSA to develop new standards "as expeditiously as possible."

*National Research Initiative Competitive Grants Program*

September 10, 2007

The U.S. Department of Agriculture's National Research Initiative (NRI) Competitive Grants Program requested applications for Fiscal Year (FY) 2008 to support high priority fundamental and mission-linked research addressing key issues of national and regional importance to agriculture, forestry, and related topics. Eligible projects for 2008 included areas such as air quality, sustainable alternative energy resources, and bioenergy production.

*Supreme Court Rules U.S. EPA May Regulate Car Emissions*

April 2, 2007

The U.S. Supreme Court ruled that carbon dioxide and other heat-trapping gases emitted from tailpipes are air pollutants covered by the Clean Air Act. The court further ruled that the EPA has the authority to regulate greenhouse gases unless it can provide a scientific basis for its refusal. The decision came in the case of Massachusetts vs. EPA, 05-1120, in which Massachusetts, California, and 10 other states filed suit against the EPA to force the agency to grant approval for their local programs to limit tailpipe emissions, beginning with the 2009 model year. The EPA had contended that it lacked authority to regulate those emissions or grant individual states the right to regulate them.

## 2.2 FEDERAL INCENTIVES

### 2.2.1 Tax Incentives

#### *Alternative Fuel Excise Tax Credit*

An excise tax credit is available for alternative fuel that is sold for use or used as a fuel to operate a motor vehicle. The credit is \$0.50 per gasoline gallon equivalent (GGE) of compressed natural gas and \$0.50 per liquid gallon of liquefied petroleum gas, liquefied natural gas, and liquefied hydrogen. An entity is eligible for the credit if it is the one liable for reporting and paying the federal excise tax on the fuel. Eligible entities must be registered with the Internal Revenue Service (IRS). If a tax exempt entity fuels vehicles from an on-site fueling station, it can claim the excise tax credit and receive a direct payment from the IRS. The credit was available until September 30, 2009, except in the case of the credit for liquefied hydrogen, which expires September 30, 2014.

#### *Alternative Fuel Infrastructure Tax Credit*

A tax credit is available for up to 30% of the cost of installing alternative fueling equipment (the credit, however, may not exceed \$30,000). Qualifying alternative fuels are natural gas, liquefied petroleum gas, hydrogen, E85, or diesel fuel blends containing a minimum of 20% biodiesel. Fueling station owners who install qualified equipment at multiple sites are allowed to use the credit towards each location. Consumers who purchase residential fueling equipment may receive a tax credit of \$1,000. The credit was effective for equipment put into service after December 31, 2005, and before December 31, 2009; the credit for hydrogen fueling property expires December 31, 2014. (Reference 26 U.S. Code 30C, EPAAct 2005, section 1342)

#### *Biodiesel Income Tax Credit*

An entity that either delivers pure, unblended biodiesel (B100) into the tank of a vehicle or uses B100 as an on-road fuel in their trade or business may be eligible for a nonrefundable income tax credit. Credits of \$1.00 per gallon of agri-biodiesel (e.g. biodiesel made from soybean oil) and \$0.50 per gallon of pure biodiesel made from other sources (e.g. waste grease) are available. The volumetric excise tax does not apply to the sale or use of B100. Eligible entities must have a certificate from the biodiesel (B100) producer or importer identifying the product as biodiesel or agri-biodiesel that confirms that it is properly registered as a fuel with the EPA and that it meets the requirements of American Society for Testing and Materials (ASTM) specification D6751. This tax credit expired December 31, 2009. (Reference 26 U.S. Code 40A)

#### *Biodiesel Mixture Excise Tax Credit*

Biodiesel blenders registered with the Internal Revenue Service (IRS) are eligible for a volumetric excise tax credit in the amount of \$1.00 per gallon of pure agri-biodiesel (e.g. biodiesel made from soybean oil) blended with petroleum diesel, or \$0.50 per gallon of pure biodiesel made from other sources (e.g. waste grease) blended with petroleum diesel. An entity is eligible only if it is registered with the IRS and has produced and sold or used the qualified biodiesel mixture as a fuel in its trade or business. Eligible blenders must have a certificate from the biodiesel (B100) producer or importer identifying the product as biodiesel or agri-biodiesel that confirms that it is properly registered as a fuel with the EPA and that it meets the requirements of American Society for Testing and Materials (ASTM) specification D6751. This tax credit expired December 31, 2008. (Reference 26 U.S. Code 6426)

#### *Fuel Cell Motor Vehicle Tax Credit*

A tax credit of up to \$8,000 is available to purchase qualified light-duty fuel cell vehicles. After December 31, 2009, the credit was reduced to \$4,000. Tax credits based on vehicle weight are also available for medium- and heavy-duty fuel cell vehicles. Vehicle manufacturers must follow the procedures as published in Notice 2008-33 in order to certify to the Internal Revenue Service that a vehicle meets the designated requirements. Notice 2008-33 also provides guidance to taxpayers about claiming the credit. This tax credit expires on December 31, 2014. (Reference 26 U.S. Code 30B)

#### *Heavy-Duty Hybrid Electric Vehicle Tax Credit*

A tax credit of up to \$18,000 is available for the purchase of qualified heavy-duty Hybrid Electric Vehicles (HEV) with a gross vehicle weight rating of more than 8,500 pounds. Vehicle manufacturers must follow the procedures published in Notice 2007-23 to certify to the Internal Revenue Service (IRS) that a heavy-duty vehicle meets the

designated requirements. See the IRS Heavy Hybrid Vehicles Web site for the current list of qualified vehicles and credits. This tax credit expires December 31, 2009. (Reference 26 U.S. Code 30B)

#### *Light-Duty Hybrid Electric Vehicle and Advanced Lean Burn Vehicle Tax Credit*

A tax credit is available for qualified light-duty HEVs and advanced lean burn technology vehicles placed in service after December 31, 2005. The Internal Revenue Service (IRS) must first acknowledge the manufacturers' certifications of qualified vehicles and credit amounts. The credit begins to phase out in the second quarter following the calendar quarter in which at least 60,000 of a manufacturer's qualifying HEVs and/or lean burn passenger automobiles and light trucks have been sold. See the IRS Hybrid Cars and Advanced Lean Burn Technology Vehicles Web site for the current list of qualified vehicles, credits, phase-out schedules, and required forms. This tax credit expires December 31, 2010. (Reference 26 U.S. Code 30B)

#### *Qualified Alternative Fuel Motor Vehicle Tax Credit*

A tax credit is available toward the purchase of Qualified Alternative Fuel Motor Vehicles (QAFMV), which may be either new, original equipment manufacturer vehicles or vehicles that have been repowered to operate on an alternative fuel. Qualifying alternative fuels are those powered by natural gas, liquefied petroleum gas, hydrogen, and fuel containing at least 85% methanol. The vehicle must be placed in service as an alternative fuel vehicle on or after January 1, 2006. Vehicle manufacturers must follow the procedures published in Notice 2006-54 in order to certify to the IRS that a vehicle meets the requirements to claim the QAFMV credit. See the IRS QAFMV Web site for the current list of qualified vehicles and credits. This tax credit expires December 31, 2010. (Reference 26 U.S. Code 30B)

#### *Small Agri-Biodiesel Producer Tax Credit*

An income tax credit of \$0.10 per gallon of agri-biodiesel is available to qualified small producers. A small producer is one that produces up to 60 million gallons of agri-biodiesel per year. Agri-biodiesel is defined as diesel fuel derived solely from virgin oils, including esters derived from corn, soybeans, sunflower seeds, cottonseeds, canola, crambe, rapeseeds, safflowers, flaxseeds, rice bran, and mustard seeds, and from animal fats. The credit applies only to the first 15 million gallons of agri-biodiesel produced in a tax year and expired December 31, 2008. (Reference 26 U.S. Code 40A)

#### *Small Ethanol Producer Tax Credit*

An income tax credit of \$0.10 per gallon of ethanol is available to qualified small ethanol producers. A small producer is one that produces up to 60 million gallons of ethanol per year. The credit applies only to the first 15 million gallons of ethanol produced in a tax year and expired December 31, 2008. (Reference 26 U.S. Code 40)

#### *Volumetric Ethanol Excise Tax Credit*

Ethanol blenders registered with the Internal Revenue Service are eligible for a Volumetric Ethanol Excise Tax Credit (VEETC) in the amount of \$0.51 per gallon of pure ethanol (minimum 190 proof) blended with gasoline. An entity is eligible only if it has produced and sold or used the qualified ethanol mixture as a fuel in its trade or business. This tax credit expires December 31, 2010. (Reference 26 U.S. Code 6426)

### **2.2.2 Grants, Rebates, Loans and Other Funding**

#### *Biobased Transportation Research Funding*

The Surface Transportation Research, Development, and Deployment (STRDD) program funds activities to promote innovation in transportation infrastructure, services, and operations. A portion of the funding made available to the STRDD program is set aside for the Biobased Transportation Research program to carry out biobased research of national importance at research centers and through the National Biodiesel Board.

#### *Biomass Research and Development Initiative*

The U.S. Department of Agriculture Office of Rural Development, in conjunction with the DOE, provides grant funding for projects addressing research and development of biomass-based products, bioenergy, biofuels, and related processes under the Section 9008 Biomass Research and Development Initiative. Eligible recipients may receive up to \$1 million for projects that involve feedstock production for biobased fuels and products, converting cellulosic biomass into biobased fuels, technologies for co-producing biobased products in biofuel production

facilities, and strategic guidance for improving overall sustainability and environmental quality of biomass technologies. (Reference 7 U.S. Code 8601)

#### *Renewable Energy Systems and Energy Efficiency Improvements Grant*

Competitive grant funding and guaranteed loans are available from the U.S. Department of Agriculture Office of Rural Development's Section 9006 Energy Program for the purchase of renewable energy systems and energy improvements for agricultural producers and small rural businesses. Qualified projects must occur in a rural area and implement technology that meets certain standards. Research and development does not qualify. Applicants must provide at least 75% of eligible project costs, and grant assistance to a single individual or entity may not exceed \$750,000. Eligible projects include biofuels, hydrogen, and energy efficiency improvements, as well as solar, geothermal, and wind. The Section 9006 Energy Program was not funded for Fiscal Year 2008. (Reference 7 U.S. Code 8106)

#### *Value-Added Producer Grants*

The U.S. Department of Agriculture Office of Rural Development awards Value-Added Producer Grants for planning activities as well as working capital for marketing value-added agricultural products and farm-based renewable energy. Independent producers, farmer and rancher cooperatives, agricultural producer groups, and majority-controlled producer-based business ventures qualify as eligible applicants. They may apply for either a planning grant or a working capital grant, but not both. In addition, no more than 10% of program funds may be awarded to majority-controlled producer-based business ventures, and grants will only be awarded if the planning activity is determined to be economically viable and sustainable. (Reference 7 U.S. Code 1621)

## **2.3 FEDERAL LAWS AND REGULATIONS**

### **2.3.1 Fuel Standards/Mandates**

#### *Renewable Fuel Standard Program*

The Energy Independence and Security Act of 2007 implemented an updated Renewable Fuel Standard (RFS) requiring 36 billion gallons of renewable fuel to be blended into gasoline by 2022. The national Renewable Fuel Standard Program (RFS Program) was developed to meet that goal. The EPA finalized RFS Program regulations, effective September 1, 2007. In 2008, 9 billion gallons of renewable fuel must be used, increasing to 36 billion gallons per year by 2022. Beginning in 2013, a certain percentage of the renewable fuels must be advanced and/or cellulosic based biofuels and biomass-based diesel, pending final rulemaking by EPA. Cellulosic biofuel is defined as any renewable fuel derived from cellulose, hemicellulose, or lignin, and achieves a 60% greenhouse gas (GHG) emissions reduction. Advanced biofuel is defined as any renewable fuel, other than ethanol derived from corn, derived from renewable biomass, and achieves a 50% GHG emissions reduction.

Each year, the EPA will determine the Renewable Volume Obligation (RVO) for parties required to participate in the RFS Program. Any party that produces gasoline for use in the U.S., including refiners, importers, and blenders (other than oxygenate blenders), is considered an obligated party under the RFS Program and is required to participate. Parties that do not produce, import, or market fuels within the 48 contiguous states are exempt from the renewable fuel tracking program. Small refineries and refiners are also exempt from the program until 2011. A small refinery is defined as one that processes fewer than 75,000 barrels of crude oil per day, has a total crude capacity of less than 150,000 barrels per day, and employs fewer than 1,500 employees company-wide. All obligated parties are expected to meet their RVO beginning in 2007.

To facilitate and track compliance with the RFS, a producer or importer of renewable fuel must generate Renewable Identification Numbers (RINs). RINs represent renewable fuels produced or imported by the entity on or after September 1, 2007, and they are assigned by gallon or batch. Assigned RINs are transferred when a party takes ownership of a batch of fuel (but not when fuel merely changes custody), and obligated parties must report their ownership of RINs to the EPA's Office of Transportation and Air Quality on a quarterly and annual basis. A trading program is in place to allow obligated parties to comply with the annual RVO requirements by purchasing RINs. In order to participate in the program, obligated parties must register with the EPA and demonstrate that they have

sufficient RINs to cover their RVOs. RINs may only be used for compliance purposes in the calendar year they are generated or the following year. (Reference 42 U.S. Code 7545(o) and 40 CFR 80.1100-80.1167)

#### *Corporate Average Fuel Economy Standards*

Corporate Average Fuel Economy (CAFE) is the sales weighted average fuel economy (mpg) of a manufacturer's fleet of passenger cars or light trucks. CAFE standards apply to cars or light trucks with a gross vehicle weight rating of up to 8,500 pounds manufactured for sale in the U.S. for any given model year. The NHTSA is responsible for establishing, amending, and enforcing the CAFE standards, and the EPA is responsible for calculating the average fuel economy for each manufacturer. Manufacturers are encouraged to produce vehicles capable of operating on alternative fuels and may receive credits toward average fuel economy for every alternative fuel vehicle produced through 2010. (Reference 49 U.S. Code 329)

### **2.3.2 Acquisition and Use Requirements**

#### *Vehicle Acquisition and Fuel Use Requirements for Federal Fleets*

Under the Energy Policy Act (EPAct) of 1992, 75% of new light-duty vehicles acquired by certain federal fleets must be AFVs. The EPAct of 1992 (as amended in January 2008) defines AFVs to include hybrid electric vehicles, fuel cell vehicles, and advanced lean burn vehicles. Federal fleets are also required to use alternative fuels in dual-fuel vehicles unless the DOE waives the requirement because of a lack of alternative fuel availability, cost restrictions, and other similar criteria. Fleets that use fuel blends containing at least 20% biodiesel (B20) in medium- and heavy-duty vehicles may earn credits toward their annual requirements. Additionally, Executive Order 13423 requires federal agencies with 20 vehicles or more in their U.S. fleet to decrease petroleum consumption by 2% per year, relative to their Fiscal Year (FY) 2005 baseline, through FY 2015. Agencies must also continue to increase their alternative fuel use by 10% per year, relative to the previous year.

Additional requirements for federal fleets were included in the Energy Independence and Security Act of 2007, including low greenhouse gas emitting vehicle acquisition requirements and renewable fuel infrastructure installation. These requirements are dependent upon formal rulemaking by the DOE. (Reference 42 U.S. Code 13212 and Executive Order 13423)

#### *Vehicle Acquisition and Fuel Use Requirements for Private and Local Government Fleets*

Under the EPAct, the DOE was directed to determine whether private and local government fleets should be mandated to acquire alternative fuel vehicles (AFVs). In January 2004, DOE published a final rule announcing its decision not to implement an AFV acquisition mandate for private and local government fleets. In March 2006, the U.S. District Court for the Northern District of California ruled that DOE must mandate AFV acquisitions for private and local fleets. Further, the District Court directed DOE to complete (1) a final determination on the Private and Local Government Fleet Rule and (2) a new Replacement Fuel Goal, both within two years. DOE issued a final rulemaking on the new Replacement Fuel Goal in March 2007 extending the EPAct of 1992 goal to 2030. The goal is to achieve a domestic production capacity for replacement fuels sufficient to replace 30% of the U.S. motor fuel consumption. In September 2007, DOE issued a Notice of Proposed Rulemaking (NPR) for the Alternative Fuel Transportation Program; Private and Local Government Fleet Determination. DOE was expected to issue a final rule in March 2008. (Reference 42 U.S. Code 13257)

#### *Vehicle Acquisition and Fuel Use Requirements for State and Alternative Fuel Provider Fleets*

Under the EPAct of 1992, certain state government and alternative fuel provider fleets must acquire alternative fuel vehicles (AFVs). Compliance is required by fleets that operate, lease, or control 50 or more light-duty vehicles within the U.S., and of those 50 vehicles, at least 20 must be used primarily within certain metropolitan areas. Those same 20 vehicles must also be capable of being centrally fueled. Covered fleets earn credits for each vehicle purchased, and credits earned in excess of their requirements can be banked or traded with other fleets. Additionally, fleets that use fuel blends containing at least 20% biodiesel (B20) in medium- and heavy-duty vehicles may earn credits toward their annual AFV acquisition requirements.

On March 20, 2007, the DOE issued a final rule on Alternative Compliance (Section 703 of EPAct of 2005), which allows fleets to choose to reduce petroleum use instead of adhering to the acquisition requirement. In order to take advantage of the petroleum reduction alternative, fleets must obtain a waiver from DOE by proving that they will

achieve petroleum reductions equivalent to that achieved by having AFVs running on alternative fuels 100% of the time. (Reference 42 U.S. Code 13251 and 13263a, and 10 CFR 490)

### **2.3.3 Fuel Taxes**

#### *Alternative Fuel Tax Exemption*

Alternative fuels used in a manner that the Internal Revenue Service (IRS) deems as nontaxable are exempt from federal fuel taxes. Examples of nontaxable uses of a motor vehicle include use on a farm for farming purposes; use in certain intercity and local buses; use in a school bus; exclusive use by a nonprofit educational organization; and exclusive use by a state, political subdivision of a state, or the District of Columbia. This exemption is not available to tax exempt entities that are not liable for excise taxes on transportation fuel.

#### *Import Duty for Fuel Ethanol*

The U.S. Customs and Border Protection imposes a 2.5% ad valorem (value-based) tariff on the import of ethanol for use in fuel. The 2008 Normal Trade Relations duty (formerly known as the Most Favored Nation duty) of \$0.54 per gallon of ethanol also applies to imports from most countries to offset the Volumetric Ethanol Excise Tax Credit (VEETC) given by the U.S. Internal Revenue Service. Ethanol imports from countries that are part of the North Atlantic Free Trade Agreement, Caribbean Basin Initiative, and Andean Trade Preference Act may not be subject to the 2008 Normal Trade Relations duty as long as the ethanol is fully produced from feedstocks from those nations. Importers of ethanol must follow the same regulations as domestic producers, including registering with the IRS. (Reference Harmonized Tariff Schedule Number 99010050, and Public Law 96-499, 99-514, and 109-423)

### **2.3.4 Other Regulations**

#### *Aftermarket Alternative Fuel Vehicle Conversions*

Aftermarket Alternative Fuel Vehicle (AFV) conversions occur when an original vehicle made by a manufacturer is altered to operate on propane, natural gas, methane gas, ethanol, or electricity. All vehicle conversions, except those that are completed for a vehicle to run on electricity, must meet applicable EPA standards. (Reference 40 CFR 85)

#### *Alternative Fuel Definition – Energy Policy Act of 1992*

The following fuels are defined as alternative fuels by EPAct: pure methanol, ethanol, and other alcohols; blends of 85% or more of alcohol with gasoline; natural gas and liquid fuels domestically produced from natural gas; liquefied petroleum gas (propane); coal-derived liquid fuels; hydrogen; electricity; pure biodiesel (B100); fuels, other than alcohol, derived from biological materials; and P-Series fuels. In addition, the DOE is authorized to designate other fuels as alternative fuels, provided that the fuel is substantially nonpetroleum, yields substantial energy security benefits, and offers substantial environmental benefits. (Reference 42 U.S. Code 13211)

#### *Alternative Fuel Definition - Internal Revenue Code*

The Internal Revenue Service (IRS) defines alternative fuels as liquefied petroleum gas, compressed natural gas, liquefied natural gas, liquefied hydrogen, liquid fuel derived from coal through the Fischer-Tropsch process, liquid hydrocarbons derived from biomass, and P-Series fuels. Biodiesel, ethanol, and renewable diesel are not considered alternative fuels by the IRS. While the term “hydrocarbons” includes liquids that contain oxygen, hydrogen, and carbon and as such “liquid hydrocarbons derived from biomass” includes ethanol, biodiesel, and renewable diesel, the IRS specifically excluded these fuels from the definition. (Reference 26 U.S. Code 6426)

#### *Clean Air Act Amendments of 1990*

The Clean Air Act Amendments (CAAA) of 1990 amended the original Clean Air Act (CAA) of 1970 to create several initiatives to reduce mobile source pollutants. The CAAA establishes standards and procedures for reducing human and environmental exposure to a range of pollutants generated by industry and transportation. States have to develop implementation plans that explain how they will carry out initiatives outlined by the CAAA. The EPA assists the states by providing scientific research, expert studies, engineering designs and money to support clean air programs.

### *High Occupancy Vehicle Lane Exemption*

States are allowed to exempt certified low emission and energy-efficient vehicles from High Occupancy Vehicle (HOV) lane requirements within the state. Eligible vehicles must be certified by the EPA and appropriately labeled for use in HOV lanes. The EPA issued a Notice of Proposed Rulemaking in May 2007 and a final rule is expected in September 2008. The DOT is responsible for planning and implementing HOV programs, including the exemption criteria established by the EPA. States that choose to adopt these requirements will be responsible for enforcement and vehicle labeling. The HOV exemption for low emission and energy-efficient vehicles expired September 30, 2009. (Reference 23 U.S. Code 166)

### *Idle Reduction Facilities Regulation*

States may provide facilities in interstate system rights-of-way that allow operators of commercial vehicles to reduce truck idling or use alternate power sources. States may allow idling reduction facilities for commercial vehicles to be placed in rest or recreation areas as well as in safety rest areas constructed or located on rights-of-way of the interstate system. The idling reduction facilities must not reduce the existing number of truck parking spaces at a given rest or recreation area. States may charge a fee for parking spaces actively providing idling reduction measures. (Reference 23 U.S. Code 111)

### *Tier 2 Vehicle and Gasoline Sulfur Program*

The Tier 2 Vehicle and Gasoline Sulfur Program requires new passenger vehicles, including sport utility vehicles, pick-up trucks, and vans, to meet stringent emissions standards. New emission standards apply to all light vehicles, regardless of whether they run on gasoline, diesel, or alternative fuels. Additionally, this program requires gasoline refiners and importers to reduce the sulfur content of gasoline sold in the U.S. (Reference 42 U.S. Code 7521)

### *Updated Fuel Economy Test Procedures and Labeling*

The EPA is responsible for motor vehicle fuel economy testing. Manufacturers test their own vehicles and report the results to the EPA. The EPA reviews the results and independently confirms a portion of them. Beginning with Model Year (MY) 2008 vehicles, all fuel economy estimates are based on new test methods that better account for actual driving conditions that can reduce fuel economy, such as high speeds, aggressive driving, use of air conditioning, and cold temperature operation. As a result of the new methods, it is anticipated that the estimates for most MY 2008 models will be lower than their MY 2007 counterparts. To help consumers shopping for new vehicles, the EPA has also redesigned the fuel economy window sticker posted on all new cars and light trucks to be easier to read and understand. The EPA is responsible for providing the posted fuel economy data. (Reference 40 CFR 600)

### *Vehicle Incremental Cost Allocation*

The U.S. General Services Administration (GSA) is required to allocate the incremental cost of purchasing alternative fuel vehicles across the entire fleet of vehicles distributed by GSA. This mandate also applies to other federal agencies that acquire vehicles for federal fleets. (Reference 42 U.S. Code 13212 (c))

## **2.4 FEDERAL PROGRAMS**

### *Air Pollution Control Program*

The Air Pollution Control Program assists state, local, and tribal agencies in planning, developing, establishing, improving, and maintaining adequate programs for prevention and control of air pollution or implementation of national air quality standards. Plans may emphasize alternative fuels, vehicle maintenance, and transportation choices to reduce vehicle miles traveled. Eligible applicants may receive federal funding for up to 60% of project costs to implement their plans. (Reference 42 U.S. Code 7405)

### *Alternative Transportation in Parks and Public Lands Program*

The Alternative Transportation in the Parks and Public Lands Program provides funding to support the goals of the program, including conservation of natural, historical, and cultural resources, and reduced congestion and pollution. The Federal Transit Administration administers the program while partnering with the Department of the Interior and the Forest Service to provide for technical assistance in alternative transportation options. Eligible projects include capital and planning expenses for alternative transportation systems such as clean fuel shuttle vehicles. (Reference 49 U.S. Code 5320)

### *Biobased Products and Bioenergy Program*

The Biobased Products and Bioenergy Program helps finance technologies needed to convert biomass into biobased products and bioenergy in a cost-competitive manner in national and international markets. Loans for biomass conversions are eligible for financing under the Business and Industry Guaranteed Loan Program. For the purpose of this program, biomass is defined as any organic matter that is available on a renewable or recurring basis, excluding timber, and including dedicated energy crops and trees, agricultural food and feed crop residues, aquatic plants, wood and wood residues, animal wastes, and other waste materials. A biobased product is considered any commercial or industrial product that utilizes biological products or renewable domestic agricultural or forestry materials, including biofuels. (Reference 7 U.S. Code 8109)

### *Clean Agriculture USA*

Clean Agriculture USA is a voluntary program that promotes the reduction of diesel exhaust emissions from agricultural equipment and vehicles by encouraging proper operations and maintenance by farmers, ranchers, and agribusinesses, use of emission-reducing technologies, and use of cleaner fuels. Clean Agriculture USA is part of the EPA's National Clean Diesel Campaign, which offers funding for clean diesel agricultural equipment projects.

### *Clean Cities*

The mission of Clean Cities is to advance the energy, economic, and environmental security of the United States by supporting local initiatives to adopt practices that reduce the use of petroleum in the transportation sector. A network of more than 80 volunteer coalitions develops public/private partnerships to promote alternative fuels and advanced vehicles, fuel blends, fuel economy, hybrid vehicles, and idle reduction. Clean Cities provides information about financial opportunities, coordinates technical assistance projects, updates and maintains databases and Web sites, and publishes fact sheets, newsletters, and related technical and informational materials.

### *Clean Construction USA*

Clean Construction USA is a voluntary program that promotes the reduction of diesel exhaust emissions from construction equipment and vehicles by encouraging proper operations and maintenance, use of emission-reducing technologies, and use of cleaner fuels. Clean Construction USA is part of the EPA's National Clean Diesel Campaign, which offers funding for clean diesel construction equipment projects.

### *Clean Fuel Fleet Program*

The Clean Fuel Fleet Program (CFFP) was implemented under the Clean Air Act Amendments of 1990 and applies to fleets in ozone non-attainment areas. The CFFP requires a percentage of new cars, and light- and medium-duty trucks purchased by certain fleets to meet lower hydrocarbon and nitrogen oxide emission standards. Individual states must ensure that appropriate fuels are available for operating these clean-fueled fleet vehicles. (Reference 42 U.S. Code 7586)

### *Clean Fuels Grant Program*

The Clean Fuels Grant Program assists designated ozone and carbon monoxide air quality non-attainment and maintenance areas in achieving or maintaining certain CAA air quality standards through grant funding. The program accelerates the deployment of advanced bus technologies by supporting the use of low-emission vehicles in transit fleets. The program assists transit agencies in purchasing low-emission buses and related equipment, constructing alternative fuel stations, modifying garage facilities to accommodate clean fuel vehicles, and assisting with the use of biodiesel. (Reference 49 U.S. Code 5308 and 49 CFR 624)

### *Clean Ports USA*

Clean Ports USA is an incentive-based program designed to reduce emissions by encouraging port authorities and terminal operators to retrofit and replace older diesel engines with new technologies and use cleaner fuels. The EPA's National Clean Diesel Campaign offers funding to port authorities and public entities to help them adopt cleaner diesel technologies and strategies.

### *Clean School Bus USA*

Clean School Bus USA is a public-private partnership that focuses on reducing children's exposure to harmful diesel exhaust by limiting school bus idling, implementing pollution reduction technologies, improving route logistics, and switching to clean fuels. Clean School Bus USA is part of the EPA's National Clean Diesel Campaign and provides

funding for projects designed to retrofit and/or replace older diesel school buses. Eligible applicants are school districts, state and local government programs, federally recognized Indian tribes, and non-profit organizations.

#### *Congestion Mitigation and Air Quality Improvement Program*

The Congestion Mitigation and Air Quality (CMAQ) Improvement Program provides funding to state departments of transportation (DOTs), municipal planning organizations (MPOs), and transit agencies for projects and programs in areas with poor air quality that reduce transportation-related emissions. Eligible activities include transit improvements, travel demand management strategies, traffic flow improvements, purchasing idle reduction equipment, development of alternative fueling infrastructure, conversion of public fleet vehicles to operate on cleaner fuels, and outreach activities that provide assistance to diesel equipment and vehicle owners and operators regarding the purchase and installation of diesel retrofits. State DOTs and MPOs must give priority to projects and programs to include diesel retrofits and other cost-effective emissions reduction activities, and cost-effective congestion mitigation activities that provide air quality benefits. (Reference 23 U.S. Code 149)

#### *Loan Guarantee Program*

The DOE provides loan guarantees to eligible projects that reduce air pollution and greenhouse gases and support early commercial use of advanced technologies, including biofuels and alternative fuel vehicles. The loan guarantee program is not intended for research and development projects. The DOE may issue loan guarantees for up to 100% of the amount of the loan for an eligible project. For loan guarantees of over 80%, the loan must be issued and funded by the Treasury Department's Federal Financing Bank. For additional program guidelines and solicitation announcements, please visit the Loan Guarantee Program Web site. (Reference 42 U.S. Code 16513)

#### *National Clean Diesel Campaign*

The National Clean Diesel Campaign (NCDC) was established by the EPA to reduce pollution emitted from diesel engines through the implementation of varied control strategies and the involvement of national, state, and local partners. The NCDC includes programs for existing diesel fleets, regulations for clean diesel engines and fuels, and regional collaborations and partnerships.

#### *National Fuel Cell Bus Technology Development Program*

The National Fuel Cell Bus Program (NFCBP) facilitates the development of commercially-viable fuel cell bus technologies and related infrastructure through grant funding. Priority consideration is given to applicants that have successfully managed advanced transportation technology projects, including projects related to hydrogen and fuel cell public transportation operations, for a period of at least five years. A minimum 50% non-federal cost share is required. (Reference 49 U.S. Code 5309)

#### *Pollution Prevention Grants Program*

The Pollution Prevention (P2) Grants Program supports state and tribal technical assistance, education, and research programs that help businesses and industries identify better environmental strategies and solutions for complying with federal and state environmental regulations. Eligible applicants include states, U.S. territories, and qualified state agencies, and colleges and universities. Local governments, private universities, private nonprofit organizations, private businesses, and individuals are not eligible for funding. Matching funds will be awarded and managed by the EPA's regional P2 program offices. Grant amounts awarded are dependent on Congressional appropriations for this program. (Reference 42 U.S. Code 13104)

#### *SmartWay Transport Partnership*

The SmartWay Transport Partnership is a voluntary partnership between the EPA and the ground freight industry designed to reduce greenhouse gases and air pollution through increased fuel efficiency. EPA provides Partners with benefits and services that include fleet management tools, technical support, information, public recognition, and use of the SmartWay Transport Partner logo. The SmartWay Transport Partnership is working with states, banks, and other organizations to develop innovative financing options that help Partners purchase devices that save fuel and reduce emissions. Grants are available to states, nonprofits, and academic institutions to demonstrate innovative idle reduction technologies for the trucking industry.

#### *State Energy Program Funding*

The State Energy Program (SEP) provides grants to states to assist in designing, developing, and implementing renewable energy and energy efficiency programs. Funding from the SEP is directed to state energy offices, and

each state's energy office manages all SEP-funded projects. States may also receive project funding from technology programs in the DOE's Office of Energy Efficiency and Renewable Energy (EERE) for SEP Special Projects. The EERE distributes the funding through an annual competitive solicitation to state energy offices.

*Voluntary Airport Low Emission Program*

The goal of the Voluntary Airport Low Emission (VALE) program is to reduce ground level emissions at commercial service airports located in designated ozone and carbon monoxide air quality non-attainment and maintenance areas. The VALE program provides funding through the Airport Improvement Program and the Passenger Facility Charges program for the purchase of low-emission vehicles, development of fueling and recharging stations, implementing gate electrification, and other airport air quality improvements. (Reference 49 U.S. Code 40101)



### **3 NEW YORK LEVERS<sup>12</sup>**

The levers used by New York to promote the use of renewable fuels include tax credits for installing infrastructure and production tax credits, as well as a variety of funding and technical assistance programs administered by the New York State Energy Research and Development Authority (NYSERDA).

#### **3.1 NEW YORK STATE INCENTIVES**

##### **3.1.1 Tax Incentives**

###### *Alternative Fueling Infrastructure Tax Credit*

A state tax credit is available for the installation of infrastructure used for fueling clean fuel vehicles. The tax credit is equal to 50% of the cost of the infrastructure. This includes infrastructure for storing a clean-burning fuel or dispensing it into the fuel tank of a motor vehicle powered by that fuel, as well as infrastructure used for recharging electric vehicles. Eligible clean fuels include natural gas, liquefied petroleum gas, hydrogen, electricity, and any other fuel that is a least 85% ethanol or other alcohol. This credit does not apply after December 31, 2010. (Reference New York Tax Law Section 187-b)

###### *Biofuel Production Tax Credit*

Biofuel production facilities in New York State are eligible for a state tax credit of up to \$0.15 per gallon of biodiesel (B100) or ethanol produced. Such facilities may qualify once they have produced and made available for sale 40,000 gallons of biofuel per year. The credit is capped at \$2.5 million per taxpayer per taxable year, and it is available for no more than four consecutive taxable years per production facility. (Reference New York Tax Law 28)

##### **3.1.2 Tax Exemptions**

There are no known renewable fuels-related tax exemptions in New York.

##### **3.1.3 Grants, Rebates, Loans and Other Funding**

###### *Biofuel Fueling Infrastructure Funding*

The objective of the Biofuel Station Initiative Program (Program), administered by NYSERDA, is to increase the number of retail fueling stations offering E85 and biodiesel blends in the state. The program provides a reimbursement of up to 50% of the cost of new installations of biofuel dispensing equipment, storage tanks, and associated piping equipment, not to exceed \$50,000 per site. Applications are accepted from owners and operators of public access retail fueling stations in the state. Funding is limited, and the Program does not cover the cost of facility permitting or engineering. Cost-shared technical assistance is also available for the following: technical

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<sup>12</sup> This section contains materials derived from the Department of Energy's (DOE) Alternative Fuels and Advanced Vehicles Data Center Website ([http://www.afdc.energy.gov/afdc/incentives\\_laws.html](http://www.afdc.energy.gov/afdc/incentives_laws.html)), unless otherwise noted.

review of design and construction specifications for the biofuel equipment; analysis of existing and proposed equipment; preparation and submission of requests for biofuel specific permits and waivers to local and state code officials; and training of facility staff.

#### *Alternative Fuel Bus Funding*

The Clean Fueled Bus Program, administered by NYSERDA, provides funds to state and local transit agencies, municipalities, and schools for up to 100% of the incremental cost of purchasing new alternative fuel buses and associated infrastructure. For the purposes of this program, an alternative fuel bus is any motor vehicle with a seating capacity of 15 or more passengers, used for the transportation of persons on public highways, that is powered by compressed natural gas (CNG) (including dual-fuel technology with a minimum of 75% use of CNG during typical operation), propane, methanol, hydrogen, biodiesel, or ethanol, or uses electricity as a primary motive force (e.g., hybrid electric). Project selection is based on the emissions reduction potential. Funding for this program comes from the Clean Water/Clean Air Bond Act.

#### *Alternative Fuel Vehicle and Fueling Infrastructure Funding*

The New York State Clean Cities Challenge, administered by NYSERDA, awards funds to members of New York's Clean Cities Coalitions that acquire AFVs or install AFV fueling or recharging infrastructure. Funds are awarded on a competitive basis and can be used to cost-share up to 75% of the proposed project, including the incremental cost of purchasing AFVs, the cost of installing fueling and recharging equipment, and the incremental costs associated with bulk alternative fuel purchases.

#### *Alternative Fuel Product Development Funding*

NYSERDA's Transportation Research Program sponsors a wide variety of product development efforts aimed at improving efficiency and increasing the use of alternative fuels. Program Opportunity Notices are issued periodically to solicit proposals for cost-share development efforts leading to the manufacture and sale of innovative products that provide energy, environmental, and economic development benefits.

#### *Alternative Fuel Vehicle and Electric Vehicle Funding - New York City*

The New York City Private Fleet Alternative Fuel/Electric Vehicle Program, administered by NYSERDA in cooperation with New York City Department of Transportation, helps private companies operating vehicles in New York City to acquire AFVs. Funds are awarded on a competitive basis for up to 50% of the incremental cost of purchasing new light-duty natural gas vehicles (NGVs) or EVs, and up to 80% of the incremental cost for purchasing new or converting medium- and heavy-duty NGVs (dedicated and bi-fuel), EVs, or hybrid electric vehicles. Eligible projects may also include installation of AFV fueling or recharging station infrastructure.

#### *Compressed Natural Gas Taxi Funding - New York City*

The New York City Clean Fuel Taxi Program provides up to \$8,500 towards the purchase of new CNG taxis cabs or the conversion of gasoline powered taxi cabs to operate on CNG.

### **3.1.4 Other Incentives**

#### *Alternative Fuel Technical Assistance*

The New York State Clean Cities Sharing Network (Network), which provides technical, policy, and program information about alternative fuel vehicles (AFVs), is managed by NYSERDA. Membership is open to all organizations, businesses, and individuals interested in AFVs and members are notified about upcoming funding opportunities and events. The Network publishes information about tax incentives, fueling stations, case studies, and contact information for the Clean Cities program and other industry leaders. The Network also organizes and sponsors technical workshops.

#### *Alternative Fuel Vehicle and Fueling Infrastructure Technical Assistance*

The NYSERDA Flexible Technical (Flex-Tech) Assistance Program provides assistance to fleet managers who want to evaluate the feasibility and cost of adding AFVs and fueling facilities to their operations. Low-cost training for vehicle mechanics is available through certified institutions.

### *High Occupancy Vehicle Lane Access*

Through the Clean Pass Program, eligible hybrid electric vehicles (HEVs) may use the Long Island Expressway HOV lanes, regardless of the number of occupants in the vehicle. Vehicles must display the Clean Pass vehicle sticker, available from the New York State Department of Motor Vehicles. For a list of eligible vehicles, see the Clean Pass Program Web site.

## **3.2 NEW YORK LAWS AND REGULATIONS**

### **3.2.1 Renewable Fuels Standards/Mandates**

#### *Low Emission Vehicle Standards*

Each Original Equipment Manufacturer's (OEM) fleet of passenger cars and light-duty trucks produced and delivered for sale in New York State must be made up of at least the same percentage of Zero Emission Vehicles (ZEVs) as set forth under California law (see Title 13, California Code of Regulations, Section 1962). An alternative compliance program has been instituted to expand the options available to OEMs in order to meet the mandate. Under this program, OEMs must make the following commitments: (1) By Model Year (MY) 2008, 7% of vehicles must be partial ZEV (PZEV), 2% advanced technology PZEV, and 1% ZEV, which could be battery-electric or fuel cell vehicles; and (2) Any ZEV or PZEV models available in California must also be made available in New York State.

Beginning in MY 2009, no individual or company may sell, lease, import, deliver, purchase, or acquire any new light-duty passenger car, light-duty truck, or medium-duty passenger vehicle in the state unless the vehicle is certified to the California emission standards stated in the California Code of Regulations. Also beginning in MY 2009, OEMs must meet a fleet average greenhouse gas emissions standard, as defined in the California Code of Regulations, which will become more stringent each year through 2016. (Reference New York State Department of Environmental Conservation Regulations Chapter III - Air Resources, Part 218)

### **3.2.2 Acquisition and Use Requirements**

#### *Biofuels Use Requirement*

All state agencies and public authorities must use E85 in flexible-fuel vehicles (FFVs) whenever it is feasible to do so. However, this only applies to the extent that gasoline-powered vehicles and central fueling stations are used. The Governor's Clean Fueled Vehicles Council, chaired by the Commissioner of the Office of General Services and comprised of the fleet managers of state agencies and public authorities, was established to prepare a plan outlining steps that can be taken to ensure that, to the greatest extent possible, all FFVs in the state fleet that can use E85 will do so. The plans will also identify and implement measures to provide for E85 fueling. Additionally, the Council is required to detail how agencies and authorities can purchase, allocate, distribute and use biodiesel in state agency and public authority fleets. At least 10% of fuels used in the state fleet must be biodiesel by 2012. (Reference Executive Order 142, 2005)

#### *Alternative Fuel Use Requirement - New York City*

Any bi-fuel motor vehicle owned or operated by the city must use the alternative fuel on which the vehicle is capable of operating. This regulation does not apply if vehicles can no longer mechanically operate on alternative fuel, or if the vehicle manufacturer recommends that the vehicle operate on gasoline or diesel fuel for a specified period of time. (Reference New York City Administrative Code 24-163.1)

#### *Vehicle Emissions and Fuel Economy Requirements - New York City*

Each light- and medium-duty vehicle purchased or leased by the city must achieve the highest vehicle emissions rating available within the applicable model year that meets the requirements for the intended use by the city of such vehicle. Additionally, the city must achieve the following minimum percentage increases in the average fuel economy for all light-duty vehicles purchased by the city, relative to the average fuel economy for all such vehicles purchased by the city during the fiscal year beginning July 1, 2004:

<u>Fiscal Year (FY)</u>	<u>Minimum Increase</u>
Beginning July 1, 2007	8%
Beginning July 1, 2008	10%
Beginning July 1, 2009	12%
Beginning July 1, 2010, and July 2, 2011	15%
Beginning July 1, 2012, July 1, 2013, and July 1, 2014	18%
Beginning July 1, 2015, and thereafter	20%

(Reference New York City Administrative Code 24-163.1)

*Compressed Natural Gas Use Requirement - Smithtown*

The town of Smithtown requires all contracted residential refuse collection operators to switch from diesel vehicles to vehicles that operate exclusively on CNG.

*Alternative Fuel Vehicle Acquisition Requirements*

State agencies and other affected entities must acquire increasing percentages of AFVs (hybrid electric vehicles qualify) as part of their annual vehicle acquisition plans. By 2010, 100% of all new light-duty vehicles must be AFVs, with the exception of designated specialty, police, or emergency vehicles. State agencies and other affected entities that operate medium- and heavy-duty vehicles must implement strategies to reduce petroleum consumption and emissions by using alternative fuels and improving vehicle fleet fuel efficiency. State agencies and other affected entities may substitute the use of 450 gallons of B100 for the acquisition of one AFV. Alternatively, the use of 2,250 gallons of B20 or use of 9,000 gallons of B5 may also be substituted in place of purchasing one AFV. No more than 50% of a given state agency fleet's AFV purchase requirement may be met by substituting B100, B20, or B5 in accordance with this Executive Order. (Reference Executive Order 111, 2001, and Executive Order 142, 2005)

*Alternative Fuel Vehicle Acquisition Requirements - New York City*

At least 80% of the New York City light-duty, non-emergency fleet, and 20% of bus fleets operated in New York City are required to be AFVs. (Reference New York City Administrative Code 24-163.1 and 24-163.2)

**3.2.3 Fuel Taxes**

*Alternative Fuel Tax Exemption and Rate Reduction*

E85, compressed natural gas, and hydrogen used exclusively to operate the engine of a motor vehicle are exempt from state sales and use taxes. In addition, cities and counties are authorized to reduce the sales and use tax imposed on B20 to 85% of the diesel fuel tax rate. This exemption and rate reduction expires September 1, 2011. (Reference New York Tax Law 1111 and 1115)

**3.2.4 Initiatives/Commissions/Task Forces**

*Alternative Fuel Fueling Infrastructure Feasibility Study*

NYSERDA, the New York State Thruway Authority, and the New York Department of Environmental Conservation have undertaken a study regarding the feasibility and construction of alternative fuel fueling facilities at gasoline stations located along the New York State Thruway. NYSERDA will then prepare and deliver to the governor a report that will include, but not be limited to, the following: 1) the current availability of the various alternative fuels and associated technologies which use alternative fuels for transportation purposes; 2) the projected growth in the availability and use of alternative fuel vehicles (AFVs) for the next 10 years; 3) the current and projected price of the various alternative fuels, AFVs (including operation cost), and alternative fuel fueling equipment for the next 10 years; and 4) the feasibility of each thruway public facility containing a gasoline station to accommodate one or more alternative fuel facilities. (Reference Assembly Bill 11331, 2006)

### **3.2.5 Other Regulations**

#### *Fuel Exclusivity Contract Regulation*

Motor fuel franchise dealers are permitted to obtain alternative fuels from a supplier other than a franchise distributor. Any provision of a franchise agreement that prohibits or discourages a dealer from purchasing or selling E85, biodiesel blends of at least 2% (B2), hydrogen, and compressed natural gas from a firm or individual other than the distributor is null and void as it pertains to that particular alternative fuel if the distributor does not supply or offer to supply the dealer with the alternative fuel. Distributors who violate the law by entering into exclusivity contracts will be subject to a fine of \$1000. If the distributors offer renewable fuels, they are allowed to require the station to use their brands. (Reference New York General Business Law 199-j)

#### *Low Speed Vehicle Definition*

A low speed vehicle is a limited use automobile that has a maximum speed greater than 20 miles per hour (mph), but not greater than 25 mph, or a truck that has a maximum speed greater than 20 mph by not greater than 25 mph and whose Gross Vehicle Weight Rating is less than 3,000 pounds. All low speed vehicles must comply with the safety standards established in Title 49 of the Code of Federal Regulations, Section 571.500. (Reference New York Vehicle and Traffic Law 121-f)

#### *Heavy-Duty Idle Reduction Requirement*

Heavy-duty vehicles (defined as vehicles with a Gross Vehicle Weight Rating exceeding 8,500 pounds) are prohibited from idling for more than five consecutive minutes when the vehicle is not in motion. Exceptions may apply, such as idling due to traffic conditions; to maintain temperatures (under regulation) for passenger comfort; and idling to provide auxiliary power or for maintenance purposes. (Reference New York State Department of Environmental Conservation Regulations Chapter III - Air Resources, Subpart 217-3)

#### *Idle Reduction Requirement - New York City*

No person may permit the engine of a motor vehicle, other than a legally authorized emergency vehicle, to idle for more than three minutes while parking, standing, or stopping, unless the engine is used to operate a loading, unloading, or processing device. When the temperature is greater than 40 degrees Fahrenheit, buses may not idle while parking, standing or stopping at any terminal point, along an established route. (Reference New York City Administrative Code Section 24-163)

#### *Idle Reduction Requirement - New Rochelle*

Light- and heavy-duty vehicles may not idle for more than five minutes, subject to the state exceptions for heavy-duty vehicles. (Reference Code of the City of New Rochelle, New York, Local Law No. 8)

#### *Idle Reduction Requirement - Bethlehem Central School District*

The Bethlehem Central School District has adopted a no-idling policy on school grounds for school buses and private vehicles. School buses must be turned off while waiting to load or unload passengers on school grounds. Exemptions are allowed, within the limits of state law, when necessary for mechanical or cold weather reasons. Privately-owned passenger vehicles are limited to idling for no more than 30 seconds while on school grounds.

## **3.3 NEW YORK UTILITIES/PRIVATE INCENTIVES**

#### *Natural Gas Vehicle (NGV) and Infrastructure Rebates and Technical Assistance*

KeySpan Energy Delivery (KED) offers a NGV incentive program that provides rebates for NGVs on a case-by-case basis and special competitive rates for compressed natural gas (CNG) fueling. KED will also help secure CNG fueling station financing, and provide technical assistance and other services to NGV fleets on a case-by-case basis. Financial awards are made depending on the fleet size, amount of fuel used, and vehicle type.

## 4 OTHER LEADING STATE LEVERS<sup>13</sup>



### 4.1 CALIFORNIA

California offers a variety of programs to promote biofuels that focus on research, investment, and the development of biofuels through grants, rebates, loans and other funding incentives. Below is a more detailed description of California's biofuel programs.

#### **Notable California Policy Levers**

Most notable in California is the Low Carbon Fuel Standard, established by executive order in January, 2007. In addition, Senate Bill 76 established the California Biodiesel Investment Account, which offers incentives to local entities to invest and develop fuel stations, grow crops, and use better technology that promotes biodiesel.

#### **4.1.1 California State Incentives**

##### **Tax Incentives, Tax Exemptions**

There are no known biofuels-related tax incentives or exemption programs in California.

##### **Grants, Rebates, Loans and Other Funding**

###### *Biodiesel Investment Account*

SB76 establishes the California Biodiesel Investment Account, which offers incentives such as grants to local governments, farmers, and research agencies to build fuel stations, grow crops, and promote better technology.<sup>14</sup> (Reference California Senate Bill 76)

###### *Alternative Fuel Incentive Development*

The California Air Resources Board and California Energy Commission have been asked to develop a joint plan to promote the use and production of alternative fuels. Incentives in the amount of \$25 million would be provided for projects in California that promote high efficiency, high mileage, alternative fuel light-, medium-, and heavy-duty vehicles, for both individual and public fleets. Incentives would be available to replace the current state vehicle fleet with clean, high mileage alternative fuel vehicles and for the construction of both publicly accessible alternative fuel retail fueling stations and fleet fueling facilities, including E-85. In addition, incentives would be provided for alternative fuel production in California and funding for research, development, and testing of alternative fuels and advancing vehicle technology. (Reference Assembly Bill 1811, 2006)

<sup>13</sup> This section contains materials derived from the Department of Energy's (DOE) Alternative Fuels and Advanced Vehicles Data Center Website ([http://www.afdc.energy.gov/afdc/incentives\\_laws.html](http://www.afdc.energy.gov/afdc/incentives_laws.html)), unless otherwise noted.

<sup>14</sup> This text is quoted from a spreadsheet created by Stephanie Batchelor, Manager of State and International Policy, Industrial and Environmental Section, Biotechnology Industry Organization (BIO).

#### *Alternative Fuel Vehicle (AFV) Rebate Program*

The "Driving Alternatives" vehicle rebate program has allocated \$1.8 million toward vehicle incentive grants for qualifying AFVs. Grants of up to \$5,000 will be made available to consumers who purchase or lease eligible zero emission vehicles (ZEVs), plug-in hybrid electric vehicles, and AFVs between May 24, 2007, and March 31, 2009. For this program, ZEVs include full function battery electric vehicles, hydrogen fuel cell vehicles, low-speed or neighborhood electric vehicles, and zero emission motorcycles.

#### *Funding for Emission Reductions - South Coast*

The Air Quality Investment Program (AQIP) is a fund created and administered by the South Coast Air Quality Management District (SCAQMD). This program allows employers within SCAQMD's jurisdiction to make annual investments into an administered fund to meet the employers' emission reduction targets by providing revenue for alternative fuel vehicle projects, among other things. Programs such as procurement of low-emission, alternative fuel or zero emission vehicles, and old vehicle scrapping could be considered for funding.

#### *Technology Advancement Funding - South Coast*

The South Coast Air Quality Management District's Technology Advancement Office provides funding for research, development, demonstration, and deployment projects that are expected to help accelerate the commercialization of advanced low-emission transportation technologies. Eligible projects have included: power trains and energy storage/conversion devices (e.g., fuel cells and batteries); and implementation of clean fuels (e.g. natural gas, propane, and hydrogen), including their infrastructures. Projects are selected by specific requests for proposals on an as-needed basis or through unsolicited proposals. Approximately \$10-12 million in funding is available annually with expected cost-share from other project partners and stakeholders.

#### *Alternative Fuel Research and Development*

The Alternative and Renewable Fuel and Vehicle Technology Program will provide grants and loans to public agencies, businesses, fleet owners, consumers, and academic institutions to develop and deploy innovative technologies that transform California's fuel and vehicle types to help attain the state's climate change policies. (Reference Assembly Bill 118, 2007)

#### *Funding for Emission Reductions*

The Carl Moyer Memorial Air Quality Standards Attainment Program provides incentive-based funding to cover the incremental cost of purchasing cleaner engines and equipment in order to achieve significant near-term reductions in nitrogen oxide emissions, Reactive Organic Gases, and particulate matter emissions. Eligible projects include cleaner on-road, off-road, marine, locomotive, and agricultural engines, as well as forklifts, airport ground support equipment, and auxiliary power units. The program has also been expanded to include heavy-duty fleet modernization projects, and projects for cars and light-duty trucks. Each local air district is responsible for distribution of the funding. (Reference California Health and Safety Code Section 44280)

#### *Alternative Fuel Vehicle (AFV) and Refueling Infrastructure Grants and Loans*

The Assembly Bill 2766 program provides incentive funding for projects that reduce on-road and off-road motor vehicle pollutant emissions (focusing on nitrogen oxides emissions and particulate matter). The program provides applicants with grant money to implement activities or purchase equipment that reduces air pollution from vehicles, including purchasing alternative fuel vehicles and building alternative fuel and advanced technology infrastructure. Check with local air districts to learn how the AB 2766 Motor Vehicle Registration Funds grants are distributed. Some programs include: Yolo-Solano AQMD, South Coast AQMD, Bay Area AQMD, Antelope Valley AQMD, Feather River AQMD, Kern County AQMD, Mojave Desert AQMD, Monterey Bay Unified APCD, North Coast Unified APCD, Northern Sierra AMD, and San Luis Obispo APCD. (Reference Health and Safety Code 44220 to 44246)

#### *Lower-Emission School Bus Grants*

The Lower-Emission School Bus Program at the California Air Resources Board (ARB) provides grant funding for new school buses and for air pollution control equipment. Air pollution control devices must be verified by the ARB to ensure that they reduce particulate matter emissions by at least 85% for each retrofitted school bus. The program focuses on replacing buses that were built prior to 1987.

A transportation bond approved by voters in November 2006 will provide approximately \$200 million in funding over two years to replace the oldest remaining public school buses and add pollution control equipment to other buses. Public school districts in California that own their own buses are eligible to receive funding for the replacement of older school buses and for the retrofit of in-use buses. Private school transportation providers that contract with public school districts to provide transportation services are eligible to receive funding for the retrofit of in-use buses. Alternative-fueled buses may be powered by natural gas, liquefied petroleum gas, electricity, methanol, or ethanol fuels as long as the other program requirements are met. Commercially available hybrid school buses may be partially eligible for funding. Check with local air districts to learn how the Lower-Emission School Bus Grants are distributed. (Reference Senate Bill 1266, 2006, and California Government Code 8879.20 to 8879.37, and Proposition 1B, 2006)

#### *Alternative Fuel Research and Development*

Innovative Clean Air Technologies Program (ICAT) is a California Air Resources Board (ARB) program that co-funds demonstration projects of innovative technologies that can reduce air pollution in order to move these projects. In general, the ICAT program can support any innovation in technology that focuses on preventing or controlling air pollution from any type of emission source in California. ICAT can support technologies applicable to any stationary, mobile, indoor, or agricultural emission source or consumer products. Proposals related to current ARB programs, such as increasing the alternatives to diesel fuel and diesel engines, increasing efficiency of zero-emission vehicles, and fuel cells and hydrogen technology, are of particular interest.

#### *Vehicle Emission Reduction Grants - Sacramento*

The Sacramento Emergency Clean Air and Transportation Program was created to provide grants to offset the advanced introduction costs of eligible projects that reduce on-road emissions of nitrogen oxide within the Sacramento federal ozone non-attainment area. Eligibility for grant awards include projects for zero- or very low-emission covered vehicles or to replace older heavy-duty diesel vehicles. Implementation of practical, low-emission retrofit technologies and other advanced technologies may also qualify. (Reference California Health and Safety Code, Sections 44299.50 through 44299.55)

#### *Funding for Heavy-Duty Vehicle Emission Reductions - Sacramento*

The Sacramento Air Quality Management District's Heavy-Duty Low-Emission Vehicle Incentive Program offers a variety of financial incentives to entities that lower nitrogen oxide emissions from heavy-duty vehicles (both on and off-road) with Gross Vehicle Weight Ratings over 14,000 pounds. This includes purchasing new heavy-duty alternative fuel vehicles as well as retrofitting older diesel vehicles to ensure lower emissions. Private businesses and public agencies in the six-county Sacramento federal ozone non-attainment area are eligible to apply for this program.

#### *Funding for Air Quality Improvement Programs - Ventura County*

The Ventura County Air Pollution Control District offers the Clean Air Fund, which is administered by the Ventura County Community Foundation. The Clean Air Fund provides grants for air quality improvement projects in the county, such as smog reduction. The Clean Air Fund Advisory Committee is interested in projects that will have significant emission impacts or support innovative air pollution reduction technologies. Currently, only earnings from the permanent endowment are available for Clean Air Fund grants.

#### *Alternative Fuel Vehicle, Refueling Infrastructure and Idle Reduction Grants - San Joaquin Valley*

The San Joaquin Valley Unified Air Pollution Control District Heavy-Duty Engine Incentive Program provides funding for the incremental cost associated with purchasing reduced emission technology for heavy-duty vehicles. Eligible funding categories include heavy-duty on-road vehicles with Gross Vehicle Weight Ratings over 14,000 pounds, off-road self-propelled vehicles, locomotives, marine vessels, electric forklifts, electric airport ground support equipment, and stationary agricultural irrigation pump engines. Eligible fuel types include compressed natural gas, liquefied petroleum gas, and electricity. The Heavy-Duty Engine Program also has an Alternative Fuel Infrastructure component that provides grants for the development of infrastructure to dispense alternative fuel for heavy-duty vehicles. Additionally, the Heavy-Duty Engine Idle Reduction Incentive Program provides incentive funds for technologies that result in a significant reduction of on- and off-road heavy-duty vehicle idling in the San Joaquin Valley. Applications must be completed and approved before the engine is purchased, and funds are provided on a first come, first served basis.

#### *Natural Gas Vehicle Home Fueling Infrastructure Incentive - South Coast*

The South Coast Air Quality Management District (SCAQMD) Governing Board approved an incentive program that matches the Mobile Source Air Pollution Reduction Review Committee (MSRC) buy-down program for the purchase of a compressed natural gas (CNG) home fueling appliance manufactured by Fuelmaker. The SCAQMD incentive program matches a \$1,000 buy-down for a total of \$2,000 for consumers who reside in the SCAQMD jurisdictional boundaries. The incentive buy-down program will apply to the purchase of up to 200 units through Fuelmaker and the lease of up to 200 units through Honda.

#### *Alternative Fuel and Advanced Technology Vehicle and Infrastructure Incentives – Vacaville*

The City of Vacaville provides incentives for any new battery-electric vehicles, dedicated compressed natural gas (CNG) vehicles, plug-in hybrid electric vehicles, and the Phill Home Refueling Appliance from FuelMaker for fueling CNG vehicles at home.

### **Other Incentives**

#### *Idle Reduction Incentives*

A transportation bond approved in November 2006 provides funding on a competitive basis for projects that achieve emissions reductions from truck engine idling through electrification infrastructure and the replacement, repower, and retrofit of heavy-duty diesel trucks. (Reference Assembly Bill 201, 2007, and Proposition 1B, 2006)

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

Qualified alternative fuel vehicles (AFVs) and hybrid electric vehicles (HEVs) can use HOV lanes regardless of the number of occupants in the vehicle. An identification sticker and FasTrak account first must be obtained from the California Department of Motor Vehicles, and only 85,000 decals will be made available. Until January 1, 2011, qualified AFVs are limited to the following: 1) Super Ultra Low Emission Vehicles (SULEVs) or Zero Emission Vehicles (ZEVs), which also meet the federal Inherently Low Emission Vehicles (ILEV) evaporative emissions standards; 2) Ultra Low Emission Vehicles (ULEVs) produced during Model Year 2004 (MY2004) or earlier that also meet the federal ILEV standard; 3) HEVs produced during MY2004 or earlier that have a fuel economy rating of 45 miles per gallon or greater and also meet the state ULEV, SULEV, or Partial Zero Emission Vehicle (PZEV) standards. Additionally, certain vehicles registered to an address in the 9-county San Francisco Bay region are permitted to use the toll-free and reduced-rate passage privilege on specified bridges if the owner of the vehicle has obtained an automatic vehicle identification account. (Reference Assembly Bill 2600 and 1407, 2006, California Vehicle Code Sections 5205.5 and 21655.9, and the 2005 Federal transportation bill Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU))

#### *Low-Emission Vehicle Incentives and Technical Training - San Joaquin Valley*

The REMOVE II Program provides incentives for the purchase of low-emission passenger vehicles, light-duty trucks, small buses, and trucks under 14,000 pounds Gross Vehicle Weight Rating in order to encourage the early introduction of low-emission vehicles in the San Joaquin Valley. The program pays between \$1,000 and \$3,000 per vehicle depending on the emission certification level and size of the vehicle. Vehicles must be powered by alternative fuel, electric, or hybrid electric engines/motors. The program also has an Alternative Fuel Vehicle (AFV) Mechanic Training Component that provides incentives for the education of personnel on the mechanics, operation safety, and maintenance of AFVs, equipment structures, fueling stations, and tools involved in the implementation of alternative fuel emission reducing technologies.

#### *Electric Vehicle (EV) Parking Incentive - Sacramento*

Sacramento offers free parking in downtown lots to individuals or small businesses, certified by the city's Emerging Small Business Development, that own or lease EVs.

#### *Alternative Fuel Vehicle (AFV) and Hybrid Electric Vehicle (HEV) Parking Incentive - Los Angeles*

Los Angeles allows free meter parking for selected HEVs and AFVs powered by electricity, compressed natural gas, and hydrogen. To qualify, the vehicle must display California Department of Motor Vehicles High Occupancy Vehicle lane access stickers. The program for HEVs expires December 31, 2007, and after this date only HEVs with the California Clean Air Vehicle Decal will qualify for free parking.

#### *Clean Vehicle Parking Incentive - Hermosa Beach*

Downtown Hermosa Beach offers free metered parking at silver-poled meters for vehicles with the California Clean Air Decal and electric vehicles, including Global Electric Motorcar (GEM) vehicles. Vehicles may park for the maximum time limit designated on the meter.

#### *Hybrid Electric Vehicle (HEV) and Zero Emission (ZEV) Vehicle Parking Incentive - San Jose*

The City of San Jose has developed a Clean Air Vehicle Parking Program to encourage reduced auto emissions, stimulate activity in the downtown, and increase sales of clean-air vehicles at San Jose auto dealerships. For eligible vehicles, the program allows free parking at participating municipal off-street parking facilities, on-street meters, and regional park and recreation parking lots. Clean-air vehicles must display the Clean Air Vehicle Parking Permit, which is available for a \$30 application fee. Only eligible vehicles purchased in San Jose after January 1, 2000, can obtain a permit. ZEVs purchased outside San Jose are also eligible to apply as long as the vehicle is registered in San Jose.

#### *Alternative Fuel Vehicle (AFV) and Hybrid Electric Vehicle (HEV) Parking Incentive - Santa Monica*

The City of Santa Monica offers free meter parking for dedicated electric and compressed natural gas and hybrid electric vehicles carrying the Clean Air Decal. Vehicles may park for the maximum time limit designated on the meter per trip.

#### *Electric Vehicle (EV) Parking Incentive - Los Angeles Airport*

The Los Angeles Airport (LAX) offers free parking and recharging for EVs in the lower/arrivals level of Parking Structures 1 and 6.

### **4.1.2 California Laws and Regulations**

#### **Renewable Fuels Standards/Mandates**

##### *Low-Carbon Fuel Standard*

Based on California's emissions reduction goals described in the Global Warming Solutions Act, the Governor committed California to reduce the carbon intensity of California's transportation fuels with a low-carbon fuel standard. On April 23, 2009 the California Air Resources Board (CARB) adopted such a standard, requiring a 10% reduction in the carbon content of fuels sold in the state by 2020 in order to reduce the greenhouse gas emissions from the state's transportation sector, which accounts for 40% of California emissions. Under the standard, petroleum producers must meet their requirements through the use of alternative fuels such as hydrogen, ethanol, biofuels and electricity to power transportation and by blending lower carbon fuels in their own petroleum mixes. The CARB ruling also included measuring the fuel "intensity," which means considering emissions created from the start of production to lasting impacts not directly related to fuel supply. A CARB analysis assigned additional indirect land use impacts to corn-based ethanol, based on potential impacts that ethanol production is believed to have on forests cleared for more cropland.

#### **Acquisition and Use Requirements**

##### *Emission Reduction Requirements*

A public transit bus rule adopted by the California Air Resources Board (CARB) regulates public transit fleets and sets emission reduction standards for new urban transit buses. The rule allows transit fleets to choose one of two options in order to reduce their emissions to the required levels: (1) using alternative fuels, including zero-emission buses, or (2) clean diesel, including retrofit devices. A solid waste collection vehicle (SWCV) rule adopted by ARB regulating emissions from SWCVs with a Gross Vehicle Weight Rating of 14,000 pounds or more. Each year through 2011, public agency and utility vehicle owners are required to install Best Available Control Technology devices or purchase vehicles that run on alternative fuels or use advanced technologies to achieve emissions requirements. (Reference California Code of Regulations Title 13, Division 3, Chapter 1, Article 1, Section 1956.1)

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

When awarding a vehicle procurement contract, every city, county and special district, including a school district and a community college district, is authorized to mandate that 75% of the passenger cars and/or light-duty trucks

acquired be energy-efficient vehicles. These include hybrid vehicles or alternative fuel vehicles that meet California's advanced technology partial zero-emission vehicle (AT PZEV) standard for criteria pollutant emissions. Vehicle procurement contracts are also authorized to evaluate fuel economy and life-cycle factors. Furthermore, by July 1, 2009, vehicles owned or leased by the state that are capable of operating on an alternative fuel must operate on that fuel unless it is unavailable. The Secretary of State and Consumer Services was required to develop and implement a plan to reduce or displace the state fleet's consumption of petroleum products on or before July 1, 2009. (Reference Assembly Bill 1660, 2005, Assembly Bill 236, 2007, California Health and Safety Code Section 43810, and California Public Resources Code Section 25725)

#### *Biodiesel Blend Use Requirement - San Francisco*

The City of San Francisco has mandated that diesel vehicles used by San Francisco's public agencies must use at least 20% biodiesel (B20) blends by December 31, 2007. All departments using diesel must begin using B20 as soon as practicable in all diesel vehicles and other diesel equipment. Each department must obtain the following incremental goals for use of B20: Initiate and complete biodiesel pilot project by December 31, 2006; 25% B20 by March 31, 2007; and 100% B20 by December 31, 2007. Departments must then pursue actions to use higher biodiesel blends, up to and including neat biodiesel (B100). (Reference Executive Directive 06-02, 2006)

### **Renewable Fuels Promotion**

#### *Alternative Fuels Plan*

On October 31, 2007, the State Energy Resources Conservation and Development Commission, in partnership with other state agencies, developed and adopted the State Alternative Fuels Plan to increase the use of alternative transportation fuels (Reference Assembly Bill 1007, 2005, Assembly Bill 1012 and 2264, 2006, and California Health and Safety Code Section 43865)

#### *Hydrogen Energy Plan*

The state's 21 interstate freeways are now designated as the "California Hydrogen Highway Network," and the state is committed to working with legislators, energy providers, automakers, and others to achieve the following by 2010: 1) build a network of hydrogen fueling stations; 2) ensure that hydrogen vehicles are commercially available for purchase; 3) incorporate hydrogen vehicles into the state fleet; 4) develop safety standards for hydrogen fueling stations and vehicles; and 5) establish incentives to encourage the use of hydrogen vehicles and encourage the development of renewable sources of energy for hydrogen production. Regulations will require the reporting of the amount and method by which the hydrogen fuel is dispensed and how the fuel is produced and delivered. The Hydrogen Highway Plan must be implemented in an environmentally responsible and advantageous manner that contributes to the reduction of GHGs, criteria air pollutants, and toxic emissions. (Reference Executive Order S-7-04, 2004, Senate Bill 1505, 2006, and California Health and Safety Code 43868 to 43869)

#### *Hydrogen Specifications*

By January 1, 2008, the Department of Food and Agriculture, with the concurrence of the State Air Resources Board, was required to establish specifications for hydrogen fuels for use in internal combustion engines and fuel cells in motor vehicles. The Department of Food and Agriculture will continue in this role until a standards development organization accredited by the American National Standards Institute formally adopts standards for hydrogen fuels for use in the internal combustion engines and fuel cells in motor vehicles. (Reference Senate Bill 76, 2005, and California Business and Professional Code 13446)

#### *Biofuels Use*

Public agencies, utilities, and solid waste collection vehicle operators are permitted to use biodiesel or biodiesel fuel blends up to 20% in any retrofitted on-road or off-road vehicle or diesel engine certified by the state whether or not biodiesel is expressly identified as a fuel for use with the retrofit system. (Reference Senate Bill 975, 2005, and California Health and Safety Code 43860)

## **Fuel Taxes**

### *Alternative Fuel Tax*

The excise tax imposed on compressed natural gas (CNG), liquefied natural gas (LNG), and liquefied petroleum gas (LPG) as vehicle fuels can be paid through an annual flat-fee rate sticker tax based on the following gross vehicle weight rating:

<u>Unladen Weight</u>	<u>Fee</u>
All passenger cars and other vehicles 4,000 pounds (lbs.) or less	\$36
More than 4,000 lbs. but less than 8,001 lbs.	\$72
More than 8,000 lbs. but less than 12,001 lbs.	\$120
12,001 lbs. or more	\$168

Alternatively, owners and operators may pay an excise tax on CNG of \$0.07 per cubic feet, \$0.06 per gallon of LNG, and \$0.06 per gallon of LPG. Excise taxes on ethanol and methanol containing not more than 15% gasoline or diesel fuel are reduced to \$0.09 per gallon. (Reference California Revenue and Taxation Code Section 8651 to 8651.8)

## **Initiatives/Commissions/ Task Forces**

### *Biofuels Specifications*

The Department of Food and Agriculture, Division of Measurement Standards, has adopted performance and drivability specifications for E85 fuel (85% ethanol blended with 15% gasoline), M85 fuel (85% methanol blended with 15% gasoline), and biodiesel fuel as follows: (1) E85 fuel must meet the standards set forth by the American Society for Testing and Materials (ASTM) specification D 5798; (2) M85 fuel must meet the specifications set forth by ASTM D 5797; and (3) Biodiesel blending stock and biodiesel fuel blends must meet the specifications set forth by ASTM D 975 for blended biodiesel and D 6751 for pure biodiesel (B100). Additionally, blends of B5 or higher must display a sign on each dispenser that reads: "This fuel contains biodiesel. Check the owner's manual or with your engine manufacturer before using." (Reference California Code of Regulations Title 4, Division 9, Chapter 6, Article 5, Sections 4145, 4146, 4147, and 4148)

### *Biofuels Production Mandate and Alternative Fuel Use Study*

The State of California plans to use biomass resources from agriculture, forestry, and urban wastes to provide transportation fuels and electricity to satisfy California's fuel and energy needs. To increase the use of biomass in fuel production, the state will produce its own biofuels at a minimum of 20% by 2010, 40% by 2020, and 75% by 2050. The California Air Resources Board and the California Energy Commission, in conjunction with other agencies, has participated in the Bioenergy Interagency Working Group to prepare a Bioenergy Action Plan. The Bioenergy Action Plan includes research and development of commercially viable biofuels production and advanced biomass conversion technologies; evaluation of the potential for biofuels to provide a clean, renewable source for hydrogen fuel; and increases the purchase of flexible-fuel vehicles to 50% of total new vehicles purchased by state agencies by 2010. (Reference Executive Order S-06-06, 2006)

### *Alternative Fuel Vehicle (AFV) Program Support*

The California Energy Commission is directed to prepare an integrated energy policy report on a biannual basis. This integrated report was first released in 2003 and contains an overview of major energy trends and issues facing the state, including those related to transportation fuels, technologies, and infrastructure. The report also examines potential effects of alternative fuels usage, vehicle efficiency improvements, and shifts in transportation modes on public health and safety, the economy, resources, the environment, and energy security. (Reference California Public Resources Code Section 25302)

## **Other Regulations**

### *West Coast Global Warming Mitigation Initiative*

Governors of Washington, Oregon, and California approved a series of recommendations for action to combat global warming as detailed in the West Coast Governors' Global Warming Initiative. It was determined that Oregon, California, and Washington must act individually and regionally to reduce greenhouse gases. The initiative

includes adopting standards to reduce greenhouse gas emissions from vehicles by expanding markets for efficiency, renewable energy and alternative fuels, including creating a working group on hydrogen fuel.

*California Global Warming Solutions Act*

California Global Warming Solutions Act requires the California Air Resources Board (CARB) and other agencies to adopt regulations that require limiting statewide greenhouse gas emissions to 1990 levels by 2020 and to regulate the reporting and enforcement (including fees) for greenhouse gas emissions. In compliance with the Global Warming Solutions Act, CARB adopted an additional set of measures in the Early Actions Report, such as requiring truck efficiency retrofit devices that reduce aerodynamic drag as well as regulations requiring tune-up, smog check, and oil change mechanics to ensure proper tire inflation as part of overall service. All these actions are captured in Executive Order S-20-06, which reiterates the leadership role of California's Secretary of Environmental Protection and the Climate Action Team's vehicle emissions standards. (Reference Assembly Bill 32, 2006, Executive Order S-20-06, 2006, and California Health and Safety Code Sections 38500 to 38599)

*Truck Idle Reduction Requirement*

The California Air Resources Board has adopted an engine and in-use truck requirement as well as an emission performance requirement for technologies used as alternatives to the truck's main engine idling. Model Year 2008 and newer heavy-duty diesel engines are required to be equipped with a non-programmable engine shutdown system that automatically shuts down the engine after five minutes of idling or meets a 30 gram per hour nitrogen oxide idling emission standard. Operators of sleeper berth equipped trucks are required to manually shut down their engines when idling more than five minutes at any location within California beginning in 2008. The penalty for violating this measure is \$300 per violation starting January 1, 2008. Furthermore, the Department of Motor Vehicles will not register, renew, or transfer registration for any vehicle operator who has received a violation until the violation is cleared. (Reference California Code of Regulations Title 13, Division 3, Chapter 10, Article 1, Section 2485 and Assembly Bill 233, 2007)

*School Bus Idle Reduction Requirement*

The California Air Resources Board has established an airborne toxic control measure (ATCM) that limits school bus idling at or near schools to only when necessary for safety or operational concerns. This ATCM is intended to reduce diesel exhaust particulate matter and other toxic air contaminants from heavy-duty vehicle exhaust. (Reference California Code of Regulations Title 13, Division 3, Chapter 10, Section 2480)

*Zero Emission Vehicle (ZEV) Production Requirements*

All 2005 model year and subsequent model year passenger cars, light-duty trucks, and medium-duty vehicles will be certified as ZEVs if the vehicles produce zero exhaust emissions of any criteria pollutant (or precursor pollutant) with certain exceptions for fuel-fired heaters. Manufacturers must produce and deliver for sale in California a minimum percentage of ZEVs for each model year as follows:

2005-2008	10%
2009-2011	11%
2012-2014	12%
2015-2017	14%
2018 and on	16%

Manufacturers may comply with the ZEV requirements through multiple alternative compliance options that include other low emission vehicles. (Reference California Code of Regulations Title 13, Division 3, Chapter 1, Article 1, Section 1962)

*Alternative Fuel Vehicle (AFV) License*

In order to equalize the vehicle license fee between AFVs and conventional fuel vehicles, the incremental cost of purchasing an AFV is exempt from the vehicle license fee (of 2%) when the costs are more than the most comparable conventional fuel vehicle, as determined by the California Energy Commission. This reduction applies to new, light-duty AFVs that are certified to meet or exceed Ultra Low Emission Vehicle standards. This program expires January 1, 2009. (Reference California Revenue and Taxation Code Section 10759.5)

#### *Low-Speed Vehicle Access to Roadways*

Low-speed vehicles are defined as motor vehicles having four wheels on the ground, an unladen weight of 1,800 pounds or less, and the ability to reach a minimum speed of 20 miles per hour (mph) and a maximum speed of 25 mph. Low-speed vehicles are subject to all the provisions applicable to a motor vehicle, and drivers of low-speed vehicles must comply with all provisions applicable to drivers of motor vehicles. The operator of a low-speed vehicle may not operate the vehicle on any roadway with a speed limit in excess of 35 mph. (Reference California Vehicle Code Sections 385.5, 21250, 21251, and 21260)

#### *Emission Reduction Non-Attainment Fee*

Air Pollution Control Districts (APCD) in California that have not attained state and federal air quality standards may collect an annual surcharge of up to \$6.00 per vehicle as part of the California Department of Motor Vehicle registration fee. These funds are used for projects related to reducing pollution from motor vehicles. Each APCD operates its own program and is funded at different levels. (Reference California Vehicle Code Section 9250.2)

#### *Heavy-Duty Idle Reduction Requirement - Sacramento*

The City of Sacramento has passed an ordinance prohibiting the idling of all heavy-duty on-road vehicles and all heavy-duty off-road equipment for more than five minutes at a given location. Vehicles, off-road equipment, and transport refrigeration units are also prohibited from extended idling within 100 feet of a residence or school. (Reference Sacramento City Code Chapter 8.116)

#### *Emissions Reduction Requirements - San Joaquin Valley*

The San Joaquin Valley Air Pollution Control District is authorized to do the following: (1) Adopt rules and regulations that require the use of best available control technology for new and modified sources of pollution, promote the use of cleaner burning alternative fuels, and facilitate ridesharing for commuters; (2) Impose a \$1 fee on the initial and renewal of motor vehicle registration in the district for reducing air pollution from motor vehicles; and (3) Establish expedited permit review and project assistance mechanisms for facilities or projects that are directly related to research and development, demonstration, or commercialization of electric and other clean fuel vehicle technologies. (Reference California Health and Safety Code Sections 40603 and 40605)

#### *Public Agency Fleet Emissions Reduction Requirements - South Coast*

The South Coast Air Quality Management District has the authority to require government fleets and private contractors working with public entities to purchase cleaner, alternative fuel vehicles. The rule applies to transit buses, school buses, trash trucks, and other vehicles, and it has set alternative fuel vehicle purchasing requirements for public and commercial fleets that operate in Southern California. The rules are applicable in Los Angeles, San Bernardino, Riverside, and Orange Counties. (Reference SCAQMD Rules 1191 to 1196 and 1186.1)

#### *Neighborhood Electric Vehicle (NEV) Access to Roadways - Placer County*

Until January 1, 2009, the Cities of Lincoln and Rocklin in Placer County are authorized to establish an NEV transportation plan subject to the same review process established for the golf cart transportation plan. NEVs are defined as low-speed vehicles, and they may be used on state highways under certain conditions. A report to the Legislature is required by January 1, 2008. Additionally, discussions are encouraged between the State Legislature, the Department of Motor Vehicles, and the California Highway Patrol regarding the adoption of a new classification for licensing motorists who use NEVs. (Reference California Streets and Highways Code 1963 to 1963.8)

### **4.1.3 California Utilities/Private Incentives**

#### *City of Riverside Employee Vehicle Purchase Incentives*

City of Riverside employees are eligible to receive a rebate toward the purchase of qualified alternative fuel and hybrid electric vehicles that are purchased from a City of Riverside automobile dealership. New qualified vehicles can receive up to \$2,000 and used qualified vehicles can receive up to \$1,000.

#### *Alternative Fuel Vehicle (AFV) and Hybrid Electric Vehicle (AFV) Insurance Discount*

Farmers Insurance provides a discount on insurance to HEV and AFV owners. Owners can save 10% on all major insurance coverage. To qualify, the automobile must be either: 1) A vehicle designed to use a dedicated alternative

fuel as defined in the Energy Policy Act of 1992; or 2) An electric and gasoline hybrid vehicle. A complete Vehicle Identification Number (VIN) will be required to validate vehicle eligibility.

*Compressed Natural Gas (CNG) Taxi Incentive*

The San Francisco International Airport, in partnership with the San Francisco Taxicab Commission, allows drivers of CNG taxis a front-of-the-line incentive allowing them one jump and one trip fee waivers per shift.

*Electric Vehicle (EV) Recharging Rate Reduction*

The Sacramento Municipal Utility District (SMUD) offers a discounted rate of approximately 75% of the regular residential rate for electricity used to charge an EV for residential customers when the EV driver signs up for the appropriate residential time of use rate. SMUD offers lower off-peak time-of-use rates for commercial customers' EV charging.

*Electric Vehicle (EV) Recharging Rate Reduction - Los Angeles*

The Los Angeles Department of Water and Power (LADWP) offers an EV charging discount of \$0.025/kWh for electricity. The discount is available for a maximum of 500 kWh/month and is limited to the base-period rate (off-peak hours). LADWP also provides guidance on EV infrastructure to help customers determine applications for EVs in their fleet operations, EV maintenance services and training.

*Southern California Edison Rate for Electric Vehicles (EV)*

Southern California Edison offers a discounted rate for electricity used to charge EVs during off-peak time periods. Customers using electricity to charge EVs during on-peak time periods pay a discounted monthly customer fee.



## 4.2 IOWA

Iowa offers various tax credits and loan programs focused on increasing biofuel production and consumption. Below is a description Iowa's programs and regulations.

### **Notable Iowa Policy Levers**

Iowa established an Ethanol Promotion Tax Credit that provides a \$0.065 tax credit to any retailer meeting the renewable fuel standard (RFS) schedule for a given year. For retailers within 2% and 4% of meeting the RFS schedule, the tax credit will be \$0.045 and \$0.025, respectively, for every gallon of ethanol sold. (Reference Iowa Code 422.11C, 422.11N, and 422.33). The legislature enacted regulations that established Renewable Fuel Standards to replace 25% of gasoline in the state with biofuels (ethanol or biodiesel) by January 1, 2020.

### **4.2.1 Iowa State Incentives**

#### **Tax Incentives**

##### *Ethanol Blend Retailer Tax Credit*

A tax credit is available to retail service stations at which more than 60% of their total gallons of gasoline sold and tracked through metered pumps is blended with ethanol. Once station owners surpass the 60% threshold, they are eligible for a tax credit of \$0.025 for every additional gallon of gasoline blended with ethanol and sold during the tax year, through December 31, 2008. Beginning January 1, 2009, an Ethanol Promotion Tax Credit will replace the current incentive for each gallon of ethanol sold. The Ethanol Promotion Tax Credit will provide a \$0.065 tax credit to any retailer meeting the renewable fuel standard (RFS) schedule for a given year. For retailers within 2% and 4% of meeting the RFS schedule, the tax credit will be \$0.045 and \$0.025, respectively, for every gallon of ethanol sold. (Reference Iowa Code 422.11C, 422.11N, and 422.33)

##### *E85 Retailer Tax Credit*

A tax credit is available to retail stations dispensing E85 for use in motor vehicles in the amount of \$0.25 per gallon sold in calendar year 2008, \$0.20 per gallon for calendar years 2009 and 2010, and \$0.10 per gallon in calendar year 2011. After 2011, the tax credit decreases by \$0.01 per year and expires after December 31, 2020. Taxpayers claiming the E85 tax credit may also claim the tax credit available for retail ethanol blends for the same tax year and same gallon of fuel. (Reference Iowa Code 422.11O)

### *Biodiesel Tax Credit*

Through December 31, 2011, retailers whose diesel sales are at least 50% biodiesel (with a minimum content of 2% biodiesel) are eligible for a \$0.03 per gallon tax credit on each gallon of B2 or higher blends sold. (Reference Iowa Code 422.11P)

### *Alternative Fuel Production Tax Credits*

The Enterprise Zone Program and the High Quality Job Creation Program offer state tax incentives to business projects for the production of biomass or alternative fuels. Depending on the program, incentives may include an investment tax credit equal to a percentage of the qualifying investment, amortized over five years; a refund of state sales, service, or use taxes paid to contractors or subcontractors during construction; a doubling of the state's refundable research activities credit; additional funding for training new employees; and a local property tax exemption of up to 100% of the value added to the property.

## **Tax Exemptions**

There are no known biofuels-related tax exemption programs in the state of Iowa.

## **Grants, Rebates, Loans and Other Funding**

### *Biofuels Infrastructure Grants*

The Renewable Fuel Infrastructure Program provides financial assistance to E85 and biodiesel distributors. Cost-share grants are available for retailers to upgrade or install new E85 or biodiesel infrastructure for up to 70% of the total cost of the project or \$50,000, whichever is less. Applicants may also qualify for supplemental incentives to upgrade or replace an E85 fueling dispenser for up to 75% of the cost of making the improvement or \$30,000, whichever is less. The supplemental incentive is available only to applicants who made the improvement no later than 60 days after the date of the publication in the Iowa administrative bulletin of the state fire marshal's order providing that a commercially available fueling dispenser is listed as compatible for use with E85 by an independent testing laboratory.

Biodiesel distributors may apply for a cost-share grant for infrastructure upgrades and installations at biodiesel terminal facilities. Facilities blending or dispensing B2 to B98 are eligible for up to 50% of the total project or \$50,000, whichever is less. Facilities blending or dispensing B99 or B100 are eligible for up to 50% of the total project or \$100,000, whichever is less. The Renewable Fuels Infrastructure Board, which has the authority to determine the eligibility of the applicants, was established under the guidance of the Iowa Department of Economic Development. (Reference House File 2689, 2008, and Iowa Code 15G.203-15G.204)

### *Alternative Fuel Vehicle Demonstration Grants*

The Iowa Department of Natural Resources conducts marketing and education outreach to encourage the use of alternative fuels and, contingent upon funding, also awards demonstration grants to individuals who purchase vehicles that operate on alternative fuels, including but not limited to, high ethanol content blends, compressed natural gas, electricity, solar energy, or hydrogen. (Reference Iowa Code 214A.19)

### *Alternative Fuel Loan Program*

The Alternate Energy Revolving Loan Program (AERLP) for alternative energy projects is administered by the Iowa Energy Center. Through a participation agreement with the project lender, the program provides up to half the cost of biomass- or alternative fuels- related fuel production projects, up to a maximum of \$1 million per facility. The AERLP funds are provided at 0% interest with the lender's funds bearing market interest. Fuel production facilities must be located in Iowa. (Reference Iowa Code 476.46)

### *Alternative Fuel Production Loans*

The Value-Added Agricultural Products and Processes Financial Assistance Program offers a combination of forgivable and traditional low-interest loans for business projects involving the production of alternative fuels. The mixture of forgivable and low-interest loans varies according to the size of the award. Research and development projects are not eligible for this program.

## **Other Incentives**

### *Alternative Fuel Research and Development*

The Iowa Power Fund, administered through the Office of Energy Independence, supports research, development, commercialization, and deployment of biofuels, renewable energy technologies, and energy efficiency technologies, while seeking to cut greenhouse gas emissions. The fund will educate the public about these technologies with the goal of increasing the demand for them. The \$100 million fund will be run by an 18-member board with oversight from a seven-member committee of legislative and university leaders. (Reference Iowa Code 469.9)

## **4.2.2 Iowa Laws and Regulations**

### **Renewable Fuels Standards/Mandates**

#### *Renewable Fuel Standard*

The goal of the Iowa RFS is to replace 25% of gasoline in the state with biofuels (ethanol or biodiesel) by January 1, 2020. One provision of the standard requires retailers to sell a certain percentage of renewable fuels as part of their total gasoline sales. Both biodiesel and ethanol count towards meeting the RFS schedule as follows:

<u>Year</u>	<u>% Biofuel Use</u>	<u>Year</u>	<u>% Biofuel Use</u>
2009	10%	2014	15%
2010	11%	2015	17%
2011	12%	2016	19%
2012	13%	2017	21%
2013	14%	2018	23%

(Reference Iowa Code 422.11N)

### **Acquisition and Use Requirements**

#### *Flexible Fuel Vehicle Acquisition Requirements*

By June 30, 2009, at least 60% of fuel purchased for use in the state's fleet of Flexible Fuel Vehicles (FFV) must be E85. A "State Government E85 Use Plan" must be created and detail how this fuel use goal will be met and how the state and retailers will work together to ensure that all E85 purchases are electronically coded and reported accurately. The Department of Administrative Services will provide regularly updated lists of E85 fueling stations to state employees. (Reference Executive Order 3, 2007)

#### *Alternative Fuel Vehicle Acquisition Requirements*

A minimum of 10% of new light-duty vehicles purchased by institutions under the control of the state fleet administrator, Iowa Department of Transportation administrator, board of directors of community colleges, state board of regents, commission for the blind, and department of corrections must be capable of using alternative fuels. Vehicles and trucks purchased and directly used for law enforcement, off-road maintenance work, or to pull loaded trailers are exempt from this requirement. (Reference Iowa Code 216B.3, 260C.19A, 262.25A, 307.21 and 904.312A)

#### *Ethanol Blended Fuel Use Requirement*

State fleet gasoline vehicles may not operate using fuel other than ethanol blended gasoline, unless under emergency circumstances. Vehicles must be affixed with a brightly visible sticker that notifies the public that the motor vehicle uses ethanol blended gasoline. However, the sticker is not required for unmarked vehicles used for law enforcement or security purposes. (Reference Iowa Code 8A.362)

### **Renewable Fuels Promotion**

#### *Renewable Fuels Promotion and Education*

The Iowa Office of Energy Independence (OEI) is directed to develop a renewable fuels marketing plan to promote the state's biofuels industry and present it to the governor and the general assembly by March 15, 2009. The plan will include research efforts to identify barriers to increased use of renewable fuels, such as infrastructure limitations

and consumer awareness. Additionally, the OEI will conduct a direct marketing campaign that promotes the use of ethanol and biodiesel blends and targets owners of flexible fuel vehicles (FFV) and diesel powered vehicles, which will be completed by December 15, 2008. As part of this campaign, the OEI will provide consumers with information including, but not limited to, fueling station locations, cold weather handling and use of biodiesel, and engine warranty statements. (Reference House File 2689, 2008)

#### *Regional Biofuels Promotion Plan*

Iowa has joined Indiana, Kansas, Michigan, Minnesota, Ohio, South Dakota, and Wisconsin in adopting the Energy Security and Climate Stewardship Platform Plan (Platform), which establishes shared goals for the Midwest region, including increased biofuels production and use. Specifically, the Platform sets the following goals:

- Produce commercially available cellulosic ethanol and other low-carbon fuels in the region by 2012;
- Increase E85 availability at retail fueling stations in the region to 15% of stations by 2015, 20% by 2020, and 33% of all fueling stations in the region by 2025;
- Reduce the amount of fossil fuel that is used in the production of biofuels by 50% by 2025;
- By 2025, at least 50% of all transportation fuels consumed by the Midwest will be from regionally produced biofuels and other low-carbon transportation fuels.

The Platform also establishes a regional biofuels corridor program. The program directs state transportation, agriculture, and regulatory officials to develop a system of coordinated signage across the region for biofuels and advanced transportation fuels and to collaborate to create regional E85 corridors. The program requires standardized fuel product coding at fueling stations as well as increased education for retailers about converting existing fueling infrastructure to dispense E85. The state transportation, agriculture, and regulatory officials were required to report their corridor implementation plans to the Midwest Governors Association by April 1, 2008.

#### **Fuel Taxes**

There are currently no known fuel taxes in Iowa.

#### **Initiatives/Commissions/Task Forces**

##### *State Fleet Biofuels Task Force*

As part of the Green Government Initiative, the Iowa Office of Energy Independence (OEI), Department of Administrative Services, Department of Natural Resources, and Department of Transportation will lead a Biofuels Task Force. The Biofuels Task Force is directed to focus on issues such as increasing the use of biofuels by state agencies to the maximum amount feasible and increasing the fuel efficiency of the state's vehicle fleet. The Biofuels Task Force will set specific five- and ten-year targets related to these areas, which will be included in the Green Government Master Plan. Progress toward these goals will be tracked using a reporting system developed under the Green Government Initiative, and resulting data will be made public through the OEI whenever possible. (Reference Executive Order 6, 2008)

#### **Other Regulations**

##### *Biodiesel Decal and Fuel Use*

An Iowa Department of Transportation (IDOT) motor vehicle operating on biodiesel fuel must be affixed with a brightly visible sticker that notifies the public that the motor vehicle uses biodiesel fuel. Biodiesel fuel for use in IDOT vehicles may be purchased by IDOT using the biodiesel fuel revolving fund created in the state treasury. The fund consists of money received from the sale of Energy Policy Act (EPAct) credits banked by IDOT as of April 19, 2001, and other money obtained or accepted by IDOT for deposit in the fund. (Reference Iowa Code 307.20)

##### *Alternative Fuel Vehicle Conversion Registration*

When a motor vehicle is modified to use a different fuel type or to use more than one fuel type, the person named on that vehicle's registration must notify the county treasurer of the new fuel type or alternative fuel types within 30 days. If the vehicle uses, or may use, a special fuel, the county treasurer will issue a special fuel identification sticker. (Reference Iowa Code 321.41)

#### *Electric Vehicle Registration Fee*

The annual registration fee for an electric vehicle (EV) is \$25.00 unless the vehicle is more than five model years old, in which case the annual registration fee is reduced to \$15.00. This section does not apply to low-speed EVs. (Reference Iowa Code 321.116)

#### *Low-Speed Vehicle Access to Roadways*

Low-speed vehicles are allowed access to roadways with posted speed limits of up to 35 miles per hour (mph). A low-speed vehicle may cross a street with a posted speed limit greater than 35 mph. (Reference Iowa Code 321.381A)

#### *E85 Fuel Exclusivity Contract Regulations*

Any motor fuel franchise contract entered into or renewed on or after May 30, 2006, must allow for the delivery of E85 at any time demanded by the motor fuel dealer or allow the dealer to purchase E85 from another source. If a contract is already in effect on May 30, 2006, and does not have an expiration date, the franchisor must provide for the delivery of E85 at times demanded by the franchisee or allow the franchisee to purchase those volumes of E85 at those times from another source. (Reference Iowa Code 323A)

#### *Renewable Fuel Labeling Requirement*

If motor vehicle fuel blended with a renewable fuel is sold from a motor vehicle fuel dispenser, the dispenser must have a decal affixed identifying the name of the renewable fuel. The decal may be different based on the type of renewable fuel used. For the purpose of this requirement, renewable fuel includes fuel blends of biodiesel and ethanol. If fuel blends containing more than 10% ethanol (E10) are being dispensed, the decal must include the following statement: "For Flexible Fuel Vehicles Only." The application must be made in writing to the Department. (Reference House File 2689, 2008, and Iowa Code 214A.16)

### **4.2.3 Iowa Utilities/Private Incentives**

There are currently no known utility or private incentives offered in Iowa.



### 4.3 KENTUCKY

Kentucky offers various tax credits and incentives to promote biofuels. The credits and incentives are mainly focused on increasing biofuel production. Below is a description of each program and incentive that Kentucky offers.

#### **Notable Kentucky Policy Levers**

Qualified ethanol producers are eligible for an income tax credit of \$1.00 per gallon of corn- or cellulosic-based ethanol that meets ASTM standard D 4806. The total credit amount for all corn and cellulosic ethanol producers is \$5 million for taxable years beginning January 1, 2008. The Governor's Office of Energy Policy (OEP) is also focusing on developing and implementing a strategy for the production of alternative transportation fuels and synthetic natural gas from fossil energy resources and biomass resources, including biodiesel and ethanol. The OEP's strategy is still in the developmental stage.

#### **4.3.1 Kentucky State Incentives**

##### **Tax Incentives**

###### *Biodiesel Production and Blending Tax Credit*

Qualified biodiesel producers or blenders are eligible for an income tax credit of \$1.00 /gallon of pure biodiesel (B100) produced or \$1.00r/gallon of biodiesel used in the blending process; re-blending of blended biodiesel does not qualify. The total amount of credit for all biodiesel producers may not exceed the annual biodiesel tax credit cap of \$5 million. Beginning January 1, 2009, the biodiesel tax credit cap is expanded to \$10 million per taxable year. Unused credits may not be carried forward and applied to a future tax return. For the purpose of this credit, biodiesel must meet ASTM specification D6751. (Reference Kentucky Revised Statutes 141.422 to 141.424)

###### *Ethanol Production Tax Credit*

Qualified ethanol producers are eligible for an income tax credit of \$1.00/gallon of corn- or cellulosic-based ethanol that meets ASTM standard D 4806. The total credit amount for all corn and cellulosic ethanol producers is \$5 million for taxable years beginning January 1, 2008. Unused credits may not be carried forward and applied to a future tax return. However, 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. (Reference Kentucky Revised Statutes 141.4244 to 141.4248)

###### *Alternative Fuel Production Tax Incentives*

The Kentucky Economic Development and Finance Authority (KEDFA) provides tax incentives to construct, retrofit, or upgrade alternative fuel production or gasification facilities that use coal or biomass as a 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 is generated by the project; 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 coal severance tax paid for coal used as a feedstock. The incentives expire at the time of receipt of the authorized incentives or 25 years from activation of the project, whichever occurs first. Approved companies may recover up to 50% of their capital investment through 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 and \$100 million for a facility that uses coal as the primary feedstock. (Reference Kentucky Revised Statutes 154.27-010 to 154.27-090)

### **Tax Exemptions**

#### *Liquefied Petroleum Gas Excise Tax Exemption*

Liquefied Petroleum Gas (LPG) is exempt from the state excise tax when it is used to operate motor vehicles on public highways, given that those vehicles are equipped with carburetion systems approved by the Natural Resources and Environmental Protection Cabinet. (Reference Kentucky Revised Statutes 234.321)

### **Grants, Rebates, Loans and Other Funding**

#### *Biomass/Renewable Energy Incentives*

House Bill 1 creates incentives of up to half the capital investment in a project that creates alternative fuel from biomass or that creates electricity from renewable energy sources. To qualify, a biofuel facility must involve a capital investment of at least \$25 million and a renewable power facility must involve a capital investment of at least \$1 million.<sup>15</sup> (Reference Kentucky House Bill 1)

### **Other Incentives**

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

Established legislatively as the Kentucky Alternative Fuel and Renewable Energy Fund Program, Kentucky New Energy Ventures (KNEV) is a state program that provides project funding to companies for research, development, and commercialization of alternative fuels and renewable energy. Specifically, KNEV is designed to: 1) grow Kentucky-based alternative fuel and renewable energy companies to promote statewide, 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 strengthen technical and business capacity; and 5) build statewide awareness of the economic development opportunities offered by Kentucky's alternative fuel and renewable energy industry.

#### *Alternative Fuel and Vehicle Promotion*

The Kentucky Division of Renewable Energy and Energy Efficiency (Division) 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 Division has implemented a number of projects to promote the use of AFVs and establish alternative fuel infrastructure in Kentucky.

## **4.3.2 Kentucky Laws and Regulations**

### **Renewable Fuels Standards/Mandates**

#### *State Energy Plan Alternative Fuel Requirements*

The Governor's Office of Energy Policy oversees the development and implementation of Kentucky's comprehensive energy strategy. Specifically, the Governor's Office of Energy Policy is directed to develop and

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<sup>15</sup> This text is quoted from a spreadsheet created by Stephanie Batchelor, Manager of State and International Policy, Industrial and Environmental Section, Biotechnology Industry Organization (BIO).

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. The strategy must include the following: establishment or expansion of state government incentives for developing, constructing, or operating alternative transportation fuels and synthetic natural gas production facilities; support of alternative energy through awareness and technology development; and administration of grant programs to support energy-related research. (Reference Kentucky Revised Statutes 152.720)

### **Acquisition and Use Requirements**

#### *Biofuels Use*

The Kentucky Transportation Cabinet and the Finance and Administration Cabinet are directed to establish procurement contracts that maximize the market availability of ethanol and biodiesel fuel blends. Additionally, employees using conventional vehicles in the Transportation Cabinet's fleet are directed to use either a 10% blend of ethanol (E10) or a 2% blend of biodiesel (B2) as their primary fueling option, and the Transportation Cabinet is directed to maximize the use of E85 in its flexible fuel vehicle fleet. The Transportation Cabinet must promote clean fuels through employee education, vendor identification, and by holding employees accountable for electing to use clean fuels in state vehicles. (Reference Executive Order 2005-124)

#### *Vehicle Acquisition Priorities and Alternative Fuel Use Requirement*

The Finance and Administration Cabinet (Cabinet) is required to develop a strategy to replace at least 50% of state motor fleet light-duty vehicles with energy-efficient vehicles including hybrid electric vehicles, fuel cell vehicles, and alternative fuel vehicles. The Cabinet must also develop a strategy to increase the use of ethanol, biodiesel, and other alternative fuels in state motor vehicle fleets. The Cabinet must report targeted vehicle and fuel usage amounts annually. (Reference Kentucky Revised Statutes 44.045)

### **Renewable Fuels Promotion/Fuel Taxes/Initiatives/Commissions/Task Forces**

Currently, none of these regulations are being offered in Kentucky.

### **Other Regulations**

#### *Natural Gas Deregulation*

The rates, terms, and conditions of service for the sale of natural gas to a compressed natural gas fueling station, retailer, or to any end-user for use as a motor vehicle fuel are exempt from regulation by the Kentucky Public Service Commission. (Reference Kentucky Revised Statutes 278.508)

### **4.3.3 Kentucky Utilities/Private Incentives**

#### *Natural Gas Infrastructure Technical Assistance*

Atmos Energy offers preliminary feasibility studies for compressed natural gas fueling stations and will assist with vendor selection on a case-by-case basis.



#### 4.4 MASSACHUSETTS

Massachusetts provides a tax exemption for fuel consisting of cellulosic biofuel or a blend of gasoline and cellulosic biofuel. Additionally, Massachusetts laws and regulations promote biofuels. Massachusetts does not offer any incentives for biofuels. Below is a description of each program and regulation that Massachusetts offers.

##### **Notable Massachusetts Policy Levers**

In Massachusetts all diesel motor vehicle fuel and all other liquid fuel used to operate motor vehicle diesel engines must contain at least 2% renewable diesel fuel by July 1, 2010; 3% renewable diesel fuel by July 1, 2011; 4% renewable diesel fuel by July 1, 2012; and 5% renewable diesel fuel by July 1, 2013. This mandate includes diesel fuel that is derived predominantly from renewable biomass.

##### **4.4.1 Massachusetts Incentives**

There are currently no known biofuels related state incentive programs offered in Massachusetts.

##### **4.4.2 Massachusetts Laws and Regulations**

###### **Renewable Fuels Standards/Mandates**

###### *Biodiesel Blend Mandate*

All diesel motor vehicle fuel and all other liquid fuel used to operate motor vehicle diesel engines must contain at least 2% renewable diesel fuel by July 1, 2010; 3% renewable diesel fuel by July 1, 2011; 4% renewable diesel fuel by July 1, 2012; and 5% renewable diesel fuel by July 1, 2013. For these purposes, certain diesel fuel derived predominantly from renewable biomass qualifies as renewable diesel fuel. The Massachusetts Department of Energy Resources must also study the feasibility, benefits, and costs of applying the percentage mandates on a statewide average basis rather than for every gallon of diesel motor fuel sold. (Reference Massachusetts Session Law 206, 2008)

###### **Acquisition and Use Requirements**

###### *Hybrid Electric (HEV) Alternative Fuel Vehicle (AFV) Acquisition Requirements*

When purchasing new motor vehicles, the Commonwealth of Massachusetts must purchase HEVs or AFVs to the maximum extent feasible and consistent with the ability of such vehicles to perform their intended functions. HEVs and AFVs must be acquired at a rate of at least 5% annually for all new motor vehicle purchases so that not less than 50% of the motor vehicles owned and operated by the Commonwealth will be HEVs or AFVs by the year 2018. (Reference Massachusetts Session Law 169, 2008)

#### *State Agency Alternative Fuel Use Requirement*

Beginning in Fiscal Year (FY) 2008, all state agencies must use a minimum of 5% biodiesel in all on- and off-road diesel engines, increasing to 15% by FY 2010. Prior to 2010, the Division of Energy Resources (DOER) will determine if the increase to 15% biodiesel is feasible as well as what vehicles can operate using the fuel. In addition, DOER will set guidelines for a minimum required use of E85 ethanol in state flexible fuel vehicles, depending on the availability of the fuel in the state. Agencies may apply for exemptions from the biodiesel and E85 fuel use requirements if it is demonstrated that the alternative fuel is not available within a reasonable distance and/or the price of the alternative fuel is cost prohibitive as determined by DOER. (Reference Massachusetts Executive Office of Administration and Finance Bulletin 13, 2006)

#### *Alternative Fuel Vehicle (AFV) Acquisition Requirement*

State fleets must acquire AFVs according to the requirements of the Energy Policy Act (EPA) of 1992. At least 75% of non-excluded vehicles purchased by the Massachusetts Department of Procurement and General Services (DPGS) must be the cleanest AFVs available and practical and at least 10% of the total non-excluded vehicles purchased by DPGS must be zero emission vehicles. (Reference Executive Order 388, 1997)

### **Renewable Fuels Promotion**

#### *Massachusetts Alternative and Clean Energy Investment Trust Fund*

Provides for the creation of the Clean Energy Technology Center and related Alternative and Clean Energy Investment Trust Fund; provides the types of clean energy investments of the fund to include clean energy related projects that promote related employment, projects that enhance clean energy technology, projects that enhance environmental protection and reduce energy costs, and projects that stimulate clean energy manufacturing and stimulate workforce development.<sup>16</sup> (Reference Massachusetts House Bill 4844)

### **Fuel Taxes**

#### *Cellulosic Biofuel Tax Exemption*

For taxable years beginning January 1, 2009, and ending December 31, 2017, fuel consisting of cellulosic biofuel or a blend of gasoline and cellulosic biofuel is eligible to be exempt from the \$0.21 per gallon fuel tax. This exemption is in proportion to the percentage of the fuel content consisting of cellulosic biofuel. For these purposes, eligible cellulosic biofuel includes fuel derived from cellulose, hemicellulose, or lignin derived from renewable biomass that meets certain specifications. (Reference Massachusetts Session Law 206, 2008)

### **Initiatives/Commissions/Task Forces**

#### *Biofuels Incentives Study*

A special commission is established to study the feasibility and effectiveness of various forms of incentives to promote the development and use of advanced biofuels in Massachusetts. Forms to be studied include production credits, the production and harvesting of woody biomass, feedstock incentives and direct consumer credits for the use of advanced biofuels in various applications. The commission must report the results of its investigation and study and its recommendations on or before March 31, 2009. (Reference Massachusetts Session Law 206, 2008)

#### *Biofuels Use and Promotion Study*

A special commission is established to investigate and develop a strategy to increase the use of advanced biofuels as alternatives to conventional carbon-based fuels by the Commonwealth of Massachusetts, its agencies and political subdivisions, and regional transit authorities. The commission will consider methods including financing mechanisms such as grants, loans, and other incentive programs for group procurement of advanced biofuels, vehicles using advanced biofuels, distribution infrastructure, and technical assistance. The commission must report the results of its investigation and study and its recommendations on or before April 15, 2009. (Reference Massachusetts Session Law 206, 2008)

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<sup>16</sup> This text is quoted from a spreadsheet created by Stephanie Batchelor, Manager of State and International Policy, Industrial and Environmental Section, Biotechnology Industry Organization (BIO).

## **Other Regulations**

### *Green Communities Act*

The Green Communities Act implements energy reform measures in Massachusetts. Such measures include formally operating under the Regional Greenhouse Gas Initiative (RGGI) and requiring utilities to provide incentives to customers to encourage energy conservation as well as requiring utilities to contract with developers of renewable energy in order to assist these developers in obtaining financing. Net metering provisions are also included. (Reference Massachusetts Senate Bill 2768, Press Release issued July 2, 2008)

### *State Agency Energy Plan*

In order to reduce the energy consumption and greenhouse gas impact of state government, Massachusetts agencies must prioritize programs and practices that result in a reduction of fossil fuel-based energy consumption and emissions from such consumption, including promoting sustainable transportation practices and switching to bio-based and other alternative fuels. (Reference Executive Order 484, 2007)

### *Idle Reduction Requirement*

Motor vehicles may not idle unnecessarily in excess of five minutes unless certain conditions apply, such as if the vehicle is delivering or accepting goods and engine assisted power is necessary. Violators of this regulation are subject to a fine of up to \$100 for the first offense and up to \$500 for each succeeding offense. Local boards of health, local police, and state and federal officials are authorized to enforce the state anti-idling law; the Massachusetts Department of Environmental Protection (DEP) enforces its own regulations. (Reference Massachusetts General Laws Chapter 90, Section 16A, and DEP Regulations 310 CMR 7.11(1)(b))

### *Deregulation of Compressed Natural Gas (CNG) as a Motor Fuel*

The sale of CNG by a fueling station for use as fuel to operate a motor vehicle is deregulated, but separate records, books, and accounts of such sales must be kept. Investments in related infrastructure must not reduce the availability or increase the cost of natural gas to customers who purchase natural gas for use other than as fuel to operate a motor vehicle. (Reference Massachusetts General Laws Chapter 164, Section 94.5)

## **4.4.3 Massachusetts Utilities/Private Incentives**

### *Natural Gas Vehicle (NGV) and Compressed Natural Gas (CNG) Infrastructure Technical Assistance*

National Grid/KeySpan Energy Delivery (KeySpan) provides technical assistance to customers interested in purchasing NGVs or building CNG fueling stations. Rebates or incentives are available on a case-by-case basis. KeySpan has 12 CNG fueling stations open to the public and has established a CNG training curriculum for mechanics, technicians, and fleet managers at Wentworth Institute of Technology in Boston.



## 4.5 MICHIGAN

Michigan offers various tax credits and exemptions to promote biofuels. The credits and exemptions are mainly focused on research and development of vehicles that run on biofuels. Below is a more detailed description of the tax credits, exemptions, and incentives that Michigan offers.

### **Notable Michigan Policy Levers**

Michigan has joined Indiana, Iowa, Kansas, Minnesota, Ohio, South Dakota, and Wisconsin in adopting the Energy Security and Climate Stewardship Platform Plan, a platform aimed at promoting the use of biofuels in the region. The program's goals include producing commercially available cellulosic ethanol and other low-carbon fuels in the region by 2012, increasing the availability of E85 to 33% of all fueling stations in the region by 2025, reducing the amount of fossil fuel used in the production of biofuels by 50% by 2025, and ensuring that by 2025 at least 50% of all transportation fuels consumed by the Midwest will be from regionally produced biofuels and other low carbon transportation fuels.

### **4.5.1 Michigan State Incentives**

#### **Tax Incentives**

##### *Hybrid Electric Vehicle Research and Development Tax Credit*

For tax years beginning on or after January 1, 2008, and ending before January 1, 2016, a taxpayer engaged in research and development of a qualified hybrid system that has the primary purpose of propelling a motor vehicle may claim a tax credit under the Single Business Tax. This tax credit is equal to 3.9% of all wages, salaries, fees, bonuses, commissions, or other payments made in the taxable year for the benefit of employees for services performed in a qualified facility. The maximum amount to be given for any one taxpayer is \$2 million in a single tax year. The qualified taxpayer may also claim a tax credit under the Michigan Business Tax equal to 3.9% of all wages, salaries, fees, bonuses, commissions, or other payments made in the taxable year on behalf of or for the benefit of employees for services performed in a qualified facility. The maximum amount to be given for any one taxpayer is \$3 million in a single tax year. (Reference Senate Bill 944, 2007, House Bill 5409, 2007 and Michigan Compiled Laws 208.1101 to 208.1601 and 208.32)

##### *Service Station Tax Credit*

Provides that the owner of a service station may claim a business tax credit equal to a percentage of the cost to convert existing fuel delivery systems to provide E85 fuel or qualified biodiesel blends. This tax credit does not

apply, however, if the service station received a matching grant from the strategic fund.<sup>17</sup> (Reference Michigan House Bill 5878)

### **Tax Exemptions**

#### *Alternative Fuel Research and Development Tax Exemption*

The Michigan Strategic Fund (MSF) has designated an Alternative Energy Zone (AEZ) within Wayne State University's Research and Technology Park in Detroit to promote the research, development, and manufacturing of alternative energy technologies, including alternative fuel vehicles (AFV). Businesses located within the AEZ that are engaged in qualified activities are eligible for exemption from state and local taxes as permitted by the Michigan NextEnergy Authority (MNEA). Alternative energy technology companies located in the AEZ may also be eligible for a refundable payroll credit under the Single Business Tax. (Reference Michigan Compiled Laws 207.821-207.827)

#### *Reduced Biofuels Tax*

A tax of \$0.12 per gallon is imposed on gasoline containing at least 70% ethanol (\$0.19 for other gasoline) and diesel fuel containing at least 5% biodiesel (\$0.15 for other diesel). Ethanol is defined as denatured fuel ethanol that is suitable for use in a spark-ignition engine when mixed with gasoline and meets the American Society for Testing and Materials (ASTM) D-5798 specifications. Biodiesel is defined as a fuel composed of certain fatty acids derived from vegetable oils or animal fats and, in accordance with standards specified for 100% biodiesel fuel, meets the ASTM D-6571 specification as approved by the Michigan Department of Agriculture. (Reference Michigan Compiled Laws 207.1008)

#### *Alternative Fuel Development Property Tax Exemption*

A tax exemption may apply to industrial property that is used for, among other purposes, high-technology activities or the creation or synthesis of biodiesel fuel. High-technology activities include those related to advanced vehicle technologies such as electric, hybrid, or alternative fuel vehicles and their components. In order to qualify for the tax exemptions, an industrial facility must obtain an exemption certificate for the property from the State Tax Commission. (Reference Senate Bill 207, 2007, and Michigan Compiled Laws 207.552 and 207.803)

### **Grants, Rebates, Loans and Other Funding**

#### *Alternative Fuel Fueling Infrastructure Grants*

The Michigan Strategic Fund (MSF) has created the Ethanol and Biodiesel Matching Grant Program to provide incentives to owners and operators of service stations to encourage installation of new fuel delivery systems designed to provide E85 and biodiesel blends. Grants may not exceed 75% of the costs to convert existing fueling infrastructure, up to \$3,000 per facility. Grants may not exceed 50% of the new construction costs to install new fueling infrastructure, up to \$12,000 per facility for E85 and \$4,000 per facility for biodiesel blends. Other funding limitations may apply. For the purpose of this grant program, biodiesel must meet American Society for Testing and Materials (ASTM) D-6751 specification and be approved by the Michigan Department of Agriculture. E85 is defined as a fuel blend containing between 70% and 85% denatured ethanol and meets ASTM D-5798 specifications. (Reference Michigan Compiled Laws 125.2078)

#### *Alternative Fuel Vehicle Emissions Inspection Exemption*

Dedicated AFVs powered by compressed natural gas, propane, electricity, or any other source as defined by rule promulgated by the Michigan Department of Transportation are exempt from emissions inspection requirements. (Reference Michigan Compiled Laws 324.6311 and 324.6512)

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<sup>17</sup> This text is quoted from a spreadsheet created by Stephanie Batchelor, Manager of State and International Policy, Industrial and Environmental Section, Biotechnology Industry Organization (BIO).

## **4.5.2 Michigan Laws and Regulations**

### **Renewable Fuels Standards/Mandates**

There are currently no known renewable fuels standards/mandates in Michigan.

### **Acquisition and Use Requirements**

#### *Acquisition and Alternative Fuel Use Requirement*

The Department of Management and Budget (DMB) is required to continue to comply with the requirements of the federal Energy Policy Act of 1992. The DMB must include hybrid electric vehicles within the state's fleet if the vehicles are determined to be cost effective and capable of meeting the state's transportation needs. In addition, as the state's public alternative fuel fueling infrastructure continues to develop, state motor fleet AFVs are required to fuel with alternative fuels to the extent possible. The DMB will develop rules to encourage or require the use of diesel fuel with the highest percentage of biodiesel content available for diesel-powered vehicles in the state fleet. (Reference Executive Directive 22, 2007)

### **Renewable Fuels Promotion**

#### *Public Acts 321, 322*

Create a Renewable Fuels Fund to promote the use and production of alternative fuels in Michigan.

#### *Public Act 329*

Public Act 329 establishes five additional renewable fuels renaissance zones, tax exempt areas, to encourage economic development and the designation of five of the established zones for the development of facilities that focus primarily on cellulosic biofuel production. (Reference Michigan Public Act 329)

#### *Regional Biofuels Promotion Plan*

Michigan has joined Indiana, Iowa, Kansas, Minnesota, Ohio, South Dakota, and Wisconsin in adopting the Energy Security and Climate Stewardship Platform Plan (Platform), which establishes shared goals for the Midwest region, including increased biofuels production and use. Specifically, the Platform sets the following goals:

- Produce commercially available cellulosic ethanol and other low-carbon fuels in the region by 2012;
- Increase E85 availability at retail fueling stations in the region to 15% of stations by 2015, 20% by 2020, and 33% of all fueling stations in the region by 2025;
- Reduce the amount of fossil fuel that is used in the production of biofuels by 50% by 2025;
- By 2025, at least 50% of all transportation fuels consumed by the Midwest will be from regionally produced biofuels and other low-carbon transportation fuels.

The Platform also establishes a regional biofuels corridor program. The program directs state transportation, agriculture, and regulatory officials to develop a system of coordinated signage across the region for biofuels and advanced transportation fuels and to collaborate to create regional E85 corridors. The program requires standardized fuel product coding at fueling stations as well as increased education for retailers about converting existing fueling infrastructure to dispense E85. The state transportation, agriculture, and regulatory officials are required to report their corridor implementation plans to the Midwest Governors Association by April 1, 2008.

### **Fuel Taxes**

#### *Public Acts 314, 332, 334*

These create tax incentives that encourage farmers to invest in equipment that will allow them to harvest crops while simultaneously collecting biomass residue for alternative fuel production.

#### *Public Act 335*

Public Act 335 provides a business tax credit to gas stations that convert existing gasoline pumps to biofuel pumps.

## **Initiatives/Commissions/Task Forces**

### *Public Act 333*

Extends the Renewable Fuels Commission until 2012 and asks it to report on the location of alternative fuel producers within the state, the volume of biofuel produced and the economic impact of the industry.

### *Renewable Fuels Commission*

The Renewable Fuels Commission is established within the Michigan Department of Agriculture to investigate and recommend strategies that the governor and the legislature may implement to promote the use of alternative fuels and alternative fuel vehicles (AFV). The Commission will also identify mechanisms that promote alternative fuel research and effective communication and coordination of efforts between state and local governments, private industry, and institutes of higher education. The commission may also review any state regulation that may hinder the use, research, and development of alternative fuels and AFVs, and recommend changes to the Governor. In June 2007, the Commission submitted a report on its investigation and recommendations to the legislature and the Governor. The Commission must issue follow-up reports at least annually until January 1, 2010. (Reference Michigan Compiled Laws 290.581-290.586)

## **Other Regulations**

### *House Bill 5746*

Legislation, signed in December of 2008 and based upon recommendation from the state's Renewable Fuels Commission, expands the production and use of renewable fuels in Michigan. The legislation includes five additional "renewable energy renaissance zones," creation of a Renewable Fuels Fund to promote the production and use of alternative fuels, and new tax incentives for the purchase of equipment capable of harvesting biomass and the conversion of existing gasoline pumps to pumps capable of delivering ethanol, biodiesel or other forms of renewable fuels. (Reference House Bill 5746)

### *Public Act 313*

Public Act 313 requires the Michigan Department of Agriculture (MDA) to develop rules that regulate biodiesel quality and purity.

### *Public Act 320*

Public Act 320 requires the Michigan Economic Development Corporation to publish an inventory of available sites for renewable fuel plants.

### *Public Act 330*

Public Act 330 requires MDA to compile public information about establishing an alternative fuel production facility in Michigan.

### *Biofuels Blender Requirements*

Blenders of ethanol and gasoline and biodiesel and diesel fuels outside of the bulk transfer terminal system must obtain a blender's license and are subject to blender reporting requirements. A licensed supplier who blends ethanol and gasoline or biodiesel and diesel fuels is also required to obtain a blender's license. (Reference Senate Bill 1074, 2006, and Michigan Compiled Laws 207.1008)

### *Hydrogen Production and Retail Requirements*

All hydrogen fuel produced and sold in the state must meet state quality requirements. Any retailer offering hydrogen fuel for sale in the state must register with, and obtain approval from, the Michigan Department of Agriculture (MDA). A hydrogen retailer must also obtain a license from the MDA for each retail outlet it operates. (Reference Senate Bill 1079, 2006, and Michigan Compiled Laws 290.642-290.647)

### *Biodiesel Retail and Storage Requirements*

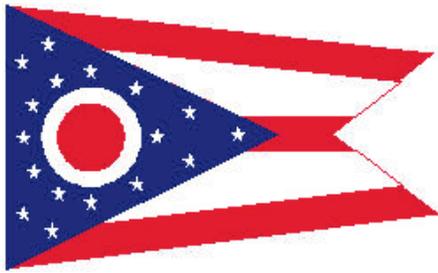
All biodiesel and biodiesel blends sold in the state must meet state quality requirements. A refiner, distributor, or retailer cannot transfer or dispense biodiesel or biodiesel blends unless the fuel is visibly free of undissolved water, sediments, and other suspended matter. Additionally, a biodiesel retailer is prohibited from selling biodiesel or biodiesel blends drawn from a storage tank that has more than two inches of water or water-alcohol at the bottom.

Any retailer of biodiesel or biodiesel blends must obtain a license from the Michigan Department of Agriculture for each retail outlet they operate. (Reference Senate Bill 1079, 2006, and Michigan Compiled Laws 290.642-290.647)

#### **4.5.3 Michigan Utilities/Private Incentives**

##### *Alternative Energy Technology Promotion*

NextEnergy is an organization with a comprehensive set of actions and incentives designed to help position Michigan as the world's leading center for alternative energy technology, research and development, education, and manufacturing. NextEnergy programs support technologies for both mobile and stationary applications using renewable and distributed energy solutions. NextEnergy offers several incentives for companies that develop or use alternative energy applications.



## 4.6 OHIO

Ohio offers various tax credits and grant programs to promote biofuels. The credits and grants are mainly focused on increasing retail use of biofuels. Below is a more detailed description of each policy and/or program that Ohio provides.

### **Notable Ohio Policy Levers**

The *Biodiesel Grant Program* provides grants to school districts that use biodiesel fuel for student related transportation to help offset the incremental cost of using biodiesel fuel instead of 100% petroleum diesel fuel. Also, Ohio joined Indiana, Iowa, Kansas, Michigan, Minnesota, South Dakota, and Wisconsin in adopting the Energy Security and Climate Stewardship Platform, which establishes shared goals for the Midwest region, including increased biofuels production and use.

### **4.6.1 Ohio State Incentives**

#### **Tax Incentives**

##### *Biofuels Retail Tax Credit*

Retailers who sell E85 or biodiesel using a metered pump at a fueling station are eligible for a tax credit of \$0.15 per gallon of E85 or biodiesel in 2007, and \$0.13 per gallon of E85 or biodiesel fuel sold in 2008. (Reference House Bill 119, 2007, and Ohio Revised Code 5733.48 and 5747.77)

#### **Tax Exemptions**

There are no known biofuels related tax exemptions in the state of Ohio.

#### **Grants, Rebates, Loans and Other Funding**

##### *Biodiesel Grant Program*

The Department of Development is required to establish a biodiesel school bus program. Under this program, the Director of Development may make grants to school districts that use biodiesel fuel for student related transportation to help offset the incremental cost of using biodiesel fuel instead of 100% petroleum diesel fuel. (Reference House Bill 119, 2007, and Ohio Revised Code 3327.17)

##### *Alternative Fuel and Fueling Infrastructure Grants*

The Alternative Fuel Transportation Grant Program authorized \$900,000 for the purchase and installation of alternative fuel fueling and blending facilities, and for the purchase and use of alternative fuel by businesses, nonprofit organizations, public school systems, and local governments. Applications for Fiscal Year 2008 funding

were accepted beginning August 27, 2007, and will continue until all funds have been committed. (Reference Ohio Revised Code 122.075)

#### *Fuel Cell Development Funding*

The Ohio Fuel Cell Initiative is a multi-year, \$103 million program administered by the Ohio Department of Development's Technology Division through the Third Frontier Project. The initiative provides grants to support the growth of Ohio's fuel cell industry through collaborations that involve companies, Ohio-based higher education institutions, and non-profit research organizations. Projects must focus on research and development that addresses technical and cost barriers to commercialization and adapting fuel cell components produced in Ohio for use in fuel cell systems.

#### *Heavy-Duty Emission Reduction Grant and Loan Program*

The Department of Development administers a Diesel Emissions Reduction Grant Program and a Diesel Emission Reduction Revolving Loan Program for the purpose of reducing emissions from diesel engines, with funding provided by Section 793 of the federal Energy Policy Act of 2005. Funding may be used for projects related to certified engine configuration including new, rebuilt, or remanufactured engine configurations as defined by the EPA or the California Air Resources Board. Funds can also be used for installing verified technology including pollution controls, retrofits, and development of truck stop electrification and auxiliary power units. (Reference Ohio Revised Code 122.861)

### **4.6.2 Ohio Laws and Regulations**

#### **Renewable Fuels Standards/Mandates**

There are currently no known renewable fuels standards/mandates in Ohio.

#### **Acquisition and Use Requirements**

##### *Alternative Fuel Vehicle Acquisition Requirements*

All new motor vehicles acquired by state agencies must be capable of using alternative fuels and must use that alternative fuel if it is reasonably available and priced. By January 1, 2007, state flexible-fuel vehicles were required to use at least 60,000 gallons of E85 per calendar year, increasing by 5,000 gallons per year thereafter. Vehicles that operate on diesel fuel must use at least one million gallons of biodiesel, increasing by 100,000 gallons per year thereafter. Credits for vehicle acquisition will be issued in accordance with the federal Energy Policy Act of 1992. Any additional credits that an agency earns above its requirements may be sold, with proceeds going to the Biodiesel Revolving Fund to pay for the incremental cost of biodiesel for use in vehicles owned or leased by the state. (Reference Ohio Revised Code 125.831-125.834 and 125.836)

#### **Renewable Fuels Promotion**

##### *Regional Biofuels Promotion Plan*

Ohio has joined Indiana, Iowa, Kansas, Michigan, Minnesota, South Dakota, and Wisconsin in adopting the Energy Security and Climate Stewardship Platform (Platform), which establishes shared goals for the Midwest region, including increased biofuels production and use. Specifically, the Platform sets the following goals:

- Produce commercially available cellulosic ethanol and other low-carbon fuels in the region by 2012;
- Increase E85 availability at retail fueling stations in the region to 15% of stations by 2015, 20% by 2020, and 33% of all fueling stations in the region by 2025;
- Reduce the amount of fossil fuel that is used in the production of biofuels by 50% by 2025;
- By 2025, at least 50% of all transportation fuels consumed by the Midwest will be from regionally produced biofuels and other low-carbon transportation fuels.

The Platform also establishes a regional biofuels corridor program. The program directs state transportation, agriculture, and regulatory officials to develop a system of coordinated signage across the region for biofuels and advanced transportation fuels and to collaborate to create regional E85 corridors. The program requires standardized fuel product coding at fueling stations as well as increased education for retailers about converting

existing fueling infrastructure to dispense E85. The state transportation, agriculture, and regulatory officials are required to report their corridor implementation plans to the Midwest Governors Association by April 1, 2008.

### **Fuel Taxes**

There are currently no known fuel taxes in Ohio.

### **Other Regulations**

#### *Alternative Fuel Vehicle Conversion*

Vehicle emission control systems are not to be tampered with unless the action is for the purpose of converting a motor vehicle to operate on an alternative fuel and is in compliance with the standards adopted under the Clean Air Act Amendments. (Reference Ohio Revised Code 3704.16)

### **4.6.3 Ohio Utilities/Private Incentives**

There are currently no known utility or private incentives offered in Ohio.



## 4.7 PENNSYLVANIA

Pennsylvania offers various grants and loan programs to promote biofuels for businesses that engage in projects that involve the use of alternative fuels (including biofuels) for transportation. Below is a more detailed description of each program that Pennsylvania offers.

### **Notable Pennsylvania Policy Levers**

The Alternative Fuels Incentive Grant (AFIG) Fund provides grant funding to schools, local governments, corporations, limited liability companies, and/or partnerships incorporated or registered in Pennsylvania, as financial assistance for advanced vehicle technology research, development, and demonstration on alternative fuels, AFVs, HEVs, and anti-idling technologies that use alternatives to diesel fuel for heavy-duty trucks.

#### **4.7.1 Pennsylvania Incentives**

##### **Tax Incentives, Tax Exemptions**

###### *Alternative Energy Production Tax Credit*

Pennsylvania's Alternative Energy Investment Act of 2008, signed into law by Gov. Edward G. Rendell on July 9, 2008 established the Alternative Energy Production Tax Credit. This tax credit was available to taxpayers who developed or constructed alternative energy production projects, located in the Commonwealth of Pennsylvania, with a useful life of at least four years. The program provided for a tax credit of 15% of the total amount of all development, equipment and construction costs of the project, after all other grants and subsidies are subtracted, up to \$1 million per taxpayer. Eligible project types included energy production or distribution, manufacturing, research and development, and rail projects related to alternative energy as defined under the Alternative Energy Portfolio Standards Act, which includes biologically derived methane gas (including landfill gas) and biomass energy.<sup>18</sup>

##### **Grants, Rebates, Loans and Other Funding**

###### *Renewable Energy Grants*

Pennsylvania Energy Development Authority (PEDA) provides grants and loan guarantees for alternative energy projects and related research referring to deployment projects, manufacturing or research. PEDA funding is available for projects involving clean, alternative fuels for transportation, biomass, and fuel cells. Another grant

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<sup>18</sup> Information taken from 2009 Pennsylvania Alternative Energy Production Tax Credit Program: Guidelines and Application Forms, p. 1, 5, <http://www.eibrary.dep.state.pa.us/dsweb/Get/Document-76004/7000-BK-DEP4256.pdf> and Pennsylvania AEPS Alternative Energy Credit Program: Overview, <http://paaeps.com/credit/overview.do>.

program, the Pennsylvania Energy Harvest Grant, seeks to deploy cleaner energy sources by providing funding for renewable energy technologies, such as biomass energy projects.

#### *Alternative Fuel and Idle Reduction Grants*

The Small Business Advantage Grant Program provides 50% matching grants, up to a maximum of \$7,500, to enable a Pennsylvania small business to adopt or acquire energy efficient or pollution prevention equipment or processes. In the past, Pennsylvania trucking companies and independent truckers have used the funding to purchase auxiliary power units. Funding is contingent upon annual legislative appropriations. The grant program funding limit has been reached, and new applications are not currently being accepted. If funds become available, the program is expected to reopen in July 2008.

#### *Alternative Fuel Vehicle (AFV), Hybrid Electric Vehicle (HEV), and Fueling Infrastructure Funding*

The Alternative Fuels Incentive Grant (AFIG) Fund provides grant funding to school and vocational school districts, municipal authorities, counties, cities, boroughs, incorporated towns, county institution districts, nonprofit entities, corporations, limited liability companies and partnerships incorporated or registered in the Commonwealth of Pennsylvania. Projects that result in product commercialization and the expansion of Pennsylvania companies will be favored in the selection process. The AFIG Program is administered by the Pennsylvania Department of Environmental Protection and provides financial assistance and information on alternative fuels, AFVs, HEVs, anti-idling technologies that use alternatives to diesel fuel for heavy-duty trucks, and advanced vehicle technology research, development, and demonstration. The emphasis of the program varies according to the funding years. For example, AFIG has recently focused on biofuels (ethanol and biodiesel) production and use. (Reference Pennsylvania Code Chapter 311 and Pennsylvania General Acts 178, 2004)

#### *Idle Reduction Loans*

The Mid-Atlantic Regional Small Business Anti-Idling Initiative provides funding of up to \$3,000 per applicant to help independent truckers and small trucking companies purchase anti-idling technology. Participants must qualify as small businesses (with a fleet size of less than 50 trucks) and be located in Pennsylvania or Delaware. Program financing is available to help owners purchase and install auxiliary power units (APUs) that provide both heating and cooling. Disbursements will be made to awardees after the following tasks are completed: 1) submission of baseline data and installation of APU, 2) submission of a six month data report, and 3) submission of a 12 month data report. The initiative is funded by a grant from the EPA to the Mid-Atlantic Regional Air Management Association.

### **Other Incentives**

#### *Idle Reduction Incentives*

The Small Business Pollution Prevention Assistance Account Loan Program provides low interest loans to small businesses undertaking projects in Pennsylvania that reduce waste, pollution or energy use. Loans are available for funding up to 75% of total eligible project cost, up to a maximum of \$100,000. The loan interest rate is a 2% fixed rate and has a maximum term of 10 years. Loans can be used for projects such as the purchase of truck auxiliary power units.

## **4.7.2 Pennsylvania Laws and Regulations**

### **Renewable Fuels Standards/Mandates/Acquisition and Use Requirements**

There are currently no fuel standards or acquisition/use requirements in Pennsylvania.

### **Renewable Fuels Promotion**

#### *Plug-In Hybrid Electric Vehicle (PHEV) Promotion*

The state of Pennsylvania urges auto manufacturers to develop and produce PHEVs for consumer use. (Reference House Resolution 106, 2007)

## **Fuel Taxes**

### *Alternative Fuels Tax*

A tax is imposed on alternative fuels used to propel vehicles of any kind on public highways. The rate of tax is determined on a gasoline gallon equivalent basis. (Reference Pennsylvania Consolidated Statutes, Title 75, Section 9004)

## **Initiatives/Commissions/Task Forces**

### *Biodiesel Committee*

The Governor's Renewable Agricultural Energy Council was established to make recommendations to the Governor on policies, regulations, and legislation that will aid in the development of renewable energy. The Governor has appointed four experts in agricultural energy (including ethanol and biodiesel) to the Council. (Reference Executive Order 2005-08, 2005)

### *State Energy Plan*

The PennSecurity Fuels Initiative, established in 2006, aims to reduce dependence on foreign oil by replacing 900 million gallons of the state's transportation fuels with alternative sources over the next decade. The initiative requires that a certain percentage of retail transportation fuel sales contain eligible fuels such as biodiesel and ethanol, and it also invests \$30 million in existing funds from the state's Alternative Fuels Incentive Grant program to build alternative fuel fueling and production infrastructure over the next five years. The initiative includes the creation of incentives that open new markets to Pennsylvania farmers who grow the feedstock to produce ethanol and biodiesel as well as the creation of safeguards against alternative fuel price increases.

### *Hybrid Electric Vehicle (HEV) Pilot Program*

The Governor launched a pilot project in 2005 to explore the use of HEVs among the state (Commonwealth) fleet. Under this pilot program, the state added 30 HEVs to the Commonwealth fleet in 2007, and it plans to add an additional 50 HEVs for Model Year (MY) 2008 and 75 HEVs by MY 2010. By MY 2011, at least 25% of all new passenger vehicles purchased for the Commonwealth fleet will be HEVs as long as the total cost of ownership does not exceed the average total cost of ownership of the rest of the fleet.

## **Other Regulations**

### *Idle Reduction Requirement - Allegheny County*

The Allegheny County Board of Health limits idling of heavy-duty diesel vehicles to five minutes, and violators may be fined up to \$500 for repeat offenses. The Board of Health plans to expand restrictions to construction equipment, locomotives and marine vessels. The County also has a school bus idle reduction regulation in place. (Reference Allegheny County Ordinance Number 16782, and Allegheny County Health Department Rules and Regulations, Article XXI, Sections 2105.91-92)

### *Idle Reduction Requirement - Philadelphia*

Idling of any heavy-duty diesel motor vehicle for more than two minutes is prohibited in the City of Philadelphia. Vehicles may idle for up to five minutes if the ambient outside air temperature is less than 32 degrees Fahrenheit or for up to 20 minutes if the ambient outside air temperature is less than 20 degrees Fahrenheit. Violators are subject to a penalty of up to \$300. (Reference City of Philadelphia Air Management Regulation IX)

## **4.7.3 Pennsylvania Utilities/Private Incentives**

### *Natural Gas Infrastructure Technical Assistance*

Columbia Gas of Pennsylvania, Inc. provides natural gas infrastructure technical assistance.

### *Natural Gas and Electric Vehicle Technical Assistance and Natural Gas Fuel Rate Reduction*

The PECO Energy Company offers assistance in finding incentives for the purchase of compressed natural gas (CNG), liquefied natural gas (LNG), electric vehicles, fuel supply for CNG and LNG vehicles, conversion of diesel

engines for use with natural gas/diesel blends, and for the installation of fueling infrastructure. PECO also offers discounted rates for CNG and LNG used to fuel vehicles.



## 4.8 TENNESSEE

Tennessee offers various grant and loan programs to promote biofuels. The grants and loans are mainly focused on increasing the State's biofuel infrastructure. Currently, Tennessee does not offer any tax credits, incentives, or exemptions to promote biofuels. Below is a more detailed description of each program that Tennessee provides.

### **Notable Tennessee Policy Levers**

The *Biodiesel Infrastructure Grants* provide grants to county governments for the installation of biodiesel infrastructure, including biodiesel tanks, pumps, and card readers, that can be used to provide biodiesel fuel for county and city owned vehicles, including school buses, maintenance vehicles, heavy equipment, and other vehicles powered by diesel fuel. Grant funding is available for up to 50% of total project costs, but not more than \$12,000 may be awarded per individual grant. Also, the Tennessee Department of Transportation (TDOT) engages in public-private partnerships with transportation fuel providers, including, but not limited to farmer cooperatives, to install fueling facilities. Fueling facilities include storage tanks and fuel pumps dedicated to dispensing biofuels, including ethanol (E85) and biodiesel (B20).

### **4.8.1 Tennessee State Incentives**

#### **Tax Incentives, Tax Exemptions**

There are no known biofuels related tax incentives or tax exemptions in the state of Tennessee.

#### **Grants, Rebates, Loans and Other Funding**

##### *Biodiesel Infrastructure Grants*

The Tennessee State Energy Office and the Department of Economic and Community Development, Energy Division, offer grants to county governments for the installation of biodiesel infrastructure, including biodiesel tanks, pumps, and card readers, that can be used to provide biodiesel fuel for county and city owned vehicles, including school buses, maintenance vehicles, heavy equipment, and other vehicles powered by diesel fuel. Grant funding is available for up to 50% of total project costs, but not more than \$12,000 may be awarded per individual grant. Grants are limited to one per county and are available through June 2010.

#### *Biofuels Fueling Infrastructure Grants*

The Tennessee Department of Transportation (TDOT) engages in public-private partnerships with transportation fuel providers, including, but not limited to farmer cooperatives, to install fueling facilities. Fueling facilities include storage tanks and fuel pumps dedicated to dispensing biofuels, including ethanol (E85) and biodiesel (B20). TDOT administers the Biofuel Green Island Corridor Grant Project to provide financial assistance with paying capital costs of purchasing, preparing, and installing fuel storage tanks and fuel pumps for biofuels at private sector fuel stations. (Reference Tennessee Code 54-1-136 and Executive Order 33, 2006)

#### *Alternative Fuel Innovations Grant*

The Tennessee Department of Environment and Conservation administers a grant program to support the use of alternative fuels by local governments and public universities. Eligible projects include covering the incremental fuel costs, engine maintenance, conversion or installation of infrastructure and promotional materials.

#### *Agricultural Feedstock Processing Demonstration Loan Program*

The Tennessee Department of Economic and Community Development will disperse loans of up to \$500,000 for projects that increase Tennessee farm income and production of alternative fuel feedstock. Eligible facilities include those that process more than 200,000 bushels each year.

### **Other Incentives**

#### *Biodiesel Production Incentive*

The Tennessee biodiesel manufacturers' incentive fund provides \$0.20 per gallon of biodiesel fuel produced and sold to Tennessee companies. Each manufacturer is eligible to receive incentives for producing up to 10 million gallons of biodiesel annually. Biodiesel is defined as certain fatty acids derived from vegetable oils or animal fats that meet the registration requirements for fuels and fuel additives established by the EPA and conform to ASTM specification D6751. (Reference Tennessee Code 67-3-103 and 67-3-423)

#### *Infrastructure Development Program*

FastTrack Infrastructure Development Program funds may be used for alternative fueling infrastructure improvements. Funds may be used where there is a commitment by certain private sector businesses to locate or expand in the state and to create or retain jobs for Tennesseans.

## **4.8.2 Tennessee Laws and Regulations**

### **Renewable Fuels Standards/Mandates**

There are currently no renewable fuels standards/mandates in Tennessee.

### **Acquisition and Use Requirements**

#### *Alternative Fuel and Fuel-Efficient Vehicle Use Requirements*

All state agencies, universities, and community colleges that have more than 10 state-owned vehicles in their fleet are required to incorporate alternative fuel, hybrid electric, or other fuel-efficient or low-emission vehicles in order to reduce or displace at least 20% of the fleet's consumption of petroleum by January 1, 2010. If the fleet includes vehicles modified for educational, emergency, or public safety purposes or vehicles used for emergency or law enforcement purposes, the fleet must provide for a minimum 10% petroleum use reduction. (Reference Tennessee Code 4-22-101)

#### *Energy-Efficient Vehicle Acquisition Requirement*

State fleets are encouraged to make every effort to ensure that at least 30% of newly purchased motor vehicles are energy-efficient vehicles. Energy-efficient vehicles are defined as passenger vehicles that are (1) alternative fuel vehicles as identified by the Energy Policy Act of 1992 (Public Law 102-486) including those using ethanol, biodiesel, or other alternative fuel, (2) a hybrid electric vehicle, or (3) a conventional gasoline vehicle achieving an average fuel economy of at least 25 miles per gallon or greater. Beginning June 30, 2008, the Commissioner of

General Services will compile information on motor vehicles owned and leased by the state, including a categorization of vehicles by an energy-efficiency rating. (Reference Tennessee Code 4-3-1109)

### **Renewable Fuels Promotion**

#### *Biofuels Production Promotion*

The state legislature supports the federal 25 by 25 Initiative, under which 25% of the total energy consumed in the U.S. by 2025 would be produced by domestic agriculture. (Reference Senate Joint Resolution 728, 2008)

### **Fuel Taxes**

#### *Liquefied Gas Tax*

A use tax of \$0.14 per gallon is imposed on liquefied gas used for the propulsion of motor vehicles on public highways in addition to an annual vehicle tax according to the following:

<u>Maximum Gross Vehicle Weight Rating</u>	<u>Tax</u>
Passenger Car	\$70
Non-Passenger Cars Up to 16,000 pounds (lbs.)	\$84
16,000 to 26,000 lbs.	\$100
Over 26,000 lbs.	\$114

Government agencies are exempt from the Liquefied Gas Tax. Liquefied gas is all combustible gas that exists in the gaseous state at 60 degrees Fahrenheit and at a pressure of 14.7 pounds per square inch, but it does not include gasoline or diesel fuel or compressed natural gas. (Reference Tennessee Code 67-3-1101, 67-3-1102, 67-3-1103, and 67-3-1106)

#### *Compressed Natural Gas Tax and Permit*

A use tax of \$0.13 per gallon is imposed on CNG used for the propulsion of motor vehicles on public highways. For the purpose of determining the tax on CNG, a gallon equivalent factor of 5.66 pounds per gallon is used.

Government agencies are exempt from this tax. A CNG vehicle user must apply for and obtain a CNG user's permit from the Commissioner of Revenue. (Reference Tennessee Code 67-3-1113, and 67-3-1114)

### **Initiatives/Commissions/Task Forces**

#### *Energy Task Force*

The Governor's Task Force on Energy Policy was established to develop a state energy plan to facilitate energy efficiency and the use of alternative and renewable fuels in the state. The energy plan will include the following: a summary of opportunities for the state government to use an energy-efficient approach in purchasing and managing the state vehicle fleet; prospective policies, legislation, and incentives to encourage energy efficiency; possible public-private partnerships to encourage research and development of clean energy technologies; and strategies for expanding the use of alternative and renewable fuels. (Reference Executive Order 54, 2008)

#### *Biofuels Strategy and Outreach Campaign*

The Governor's Interagency Alternative Fuels Working group, supported administratively by the Tennessee Department of Environment and Conservation, was established to develop a comprehensive state alternative fuels strategy to make Tennessee a leader in the production, distribution, and use of biofuels. The Working Group developed BioTENN, a comprehensive, statewide public education and outreach campaign to increase public awareness and understanding of alternative fuels, particularly biofuels. Furthermore, state agencies should strive to use ethanol and biodiesel in appropriate state-owned vehicles whenever possible and should support the development of biofuels fueling infrastructure. (Reference Executive Order 33, 2006)

#### *Provision for Establishing an Alternative Fuel Research and Development Program*

The Tennessee Department of Agriculture is authorized to develop and implement an alternative fuel research program to stimulate public and private research in fuel-related conversion technology. This research should address converting Tennessee agricultural products, such as soybeans, switchgrass, and other biomass, into

alternative fuels, as well as the production capabilities needed to deliver such alternative fuels to Tennessee consumers. (Reference Tennessee Code 54-1-136)

### **Other Regulations**

#### *High Occupancy Vehicle Lane Exemption*

Effective January 1, 2009, Inherently Low Emission Vehicles (ILEVs) or Low Emission and Energy-Efficient Vehicles (LEEEVs) with a gross vehicle weight rating of 26,000 pounds or less are permitted in HOV lanes regardless of the number of people. Such vehicles must be identified by a state decal provided by the state Department of Revenue. (Reference Senate Bill 2716, 2008, and Tennessee Code 55-8-188)

#### *Liquefied Petroleum Gas Liability Immunity*

An individual or entity involved in the business of supplying, handling, transporting, or selling LPG at a retail station is immune from civil liability if injury or damage is caused by the use of the LPG equipment in a manner or purpose other than that for which the LPG equipment was intended. (Reference Tennessee Code 29-34-207)

#### *Biofuels Specifications*

The Tennessee Department of Agriculture has the authority to inspect and test biofuels under the Kerosene and Motor Fuels Quality Inspection Act of 1989. (Reference Tennessee Code 47-18-1306)

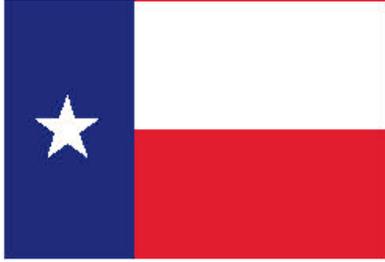
#### *Low and Medium Speed Vehicle Access to Roadways*

A low-speed vehicle is any four-wheeled electric vehicle, excluding golf carts, with a top speed greater than 20 mph but not greater than 25 mph, including neighborhood vehicles. Medium-speed vehicles have a top speed between 30 mph and 35 mph. Low- and medium-speed vehicles must comply with the safety standards in Title 49 of the Code of Federal Regulations, section 571.500. Low-speed vehicles are allowed access to roadways with speed limits of up to 35 mph. Low- and medium-speed vehicles may cross an intersection where the road or street has a posted speed limit of more than their top speeds. (Reference Senate Bill 2857, 2008, and Tennessee Code 55-8-101 and 55-8-191)

### **4.8.3 Tennessee Utilities/Private Incentives**

#### *Natural Gas Infrastructure Technical Assistance*

Atmos Energy offers preliminary feasibility studies for compressed natural gas fueling stations and vendor selection on a case-by-case basis.



## 4.9 TEXAS

Texas offers various grants to promote alternative fuels, including biofuels. The grants are mainly focused on increasing the use of alternative fuels. Currently, Texas does not offer any tax credits, incentives, or exemption to promote biofuels. Below is a more detailed description of each policy and/or program that Texas provides.

### **Notable Texas Policy Levers**

The Texas Emissions Reduction Plan (TERP) provides grants for various types of clean air projects in 41 counties to improve air quality in the state's non-attainment areas. Grants are available for new, converted, or repowered on-road and off-road vehicles and equipment.

### **4.9.1 Texas State Incentives**

#### **Tax Incentives**

There are currently no known tax incentives in Texas.

#### **Tax Exemptions**

##### *Ethanol and Biodiesel Blend Tax Exemption*

Biodiesel or ethanol blended with taxable diesel, that is identified when sold or used as a biodiesel or ethanol fuel blend, is exempt from the diesel fuel tax. (Reference Texas Statutes, Tax Code, Sections 162.001 and 162.204)

#### **Grants, Rebates, Loans and Other Funding**

##### *Heavy-Duty Natural Gas Vehicle Grants*

To encourage fleets to increase their use of heavy-duty NGVs, the Texas General Land Office (GLO) has an NGV Initiative Grant Program available for public-sector partners in certain Texas counties. The program is funded with a Texas Emissions Reduction Plan grant through the Texas Commission on Environmental Quality. A variety of vehicles, including street sweepers, forklifts, buses, and garbage trucks, are eligible for grants to help cover the cost of replacing diesel vehicles with NGVs.

##### *Alternative Fuel Vehicle Grants*

The Adopt-A-School Bus Program, a cooperative partnership between the EPA, state agencies, local elected officials, and corporate sponsors, was established as a nonprofit grant program to aid local school districts replacing their aging, diesel school bus fleets with new clean fuel buses. In an effort to ensure the longevity of the new buses, a portion of all grant money awarded is earmarked for fleet infrastructure and maintenance.

#### *Clean Vehicle and Equipment Grants*

The Texas Emissions Reduction Plan (TERP) provides grants for various types of clean air projects in 41 counties to improve air quality in the state's non-attainment areas. Grants are available for new, converted, or repowered on-road and off-road vehicles and equipment. (Reference Texas Statutes, Health & Safety Code, Chapter 386)

#### *Alternative Fuel Grants*

The Texas Emissions Reduction Plan (TERP) provides grants for alternative fuel and advanced technology demonstration and infrastructure projects under the New Technology Research and Development (NTRD) Program, which provides incentives to encourage and support research, development and commercialization of technologies that reduce pollution in Texas. The NTRD Program is administered by the Texas Environmental Research Consortium with support from the Houston Advanced Research Center. (Reference Texas Statutes, Health & Safety Code, Chapter 386)

### **Other Incentives**

#### *Natural Gas Fuel Rates and Alternative Fuel Promotion*

The Texas General Land Office (GLO) makes competitively-priced natural gas available to school districts (and other state and local public entities) for use in natural gas vehicles. The GLO has also established an alternative fuels program to aggressively promote the use of alternative energy sources, especially for those fuels abundant in Texas. The GLO alternative fuels program serves as a liaison between government and industry.

#### *Alternative Fuel Grant Assistance*

The Texas State Energy Conservation Office researches and assists public and private entities in securing grants to encourage the use of alternative fuels, including the use of hybrid electric vehicles and conversion of state and local government fleets to operate on compressed natural gas, liquefied petroleum gas, hydrogen, biodiesel and ethanol.

#### *Alternative Fuel Research and Development*

The Railroad Commission of Texas (RRC) regulates the safety of the liquefied natural gas (LNG), compressed natural gas (CNG), and liquefied petroleum gas (LPG) industries. The RRC, through its Alternative Fuels Research and Education Division, promotes the use of LPG and administers grant programs to encourage the purchase of LPG school buses and forklifts.

#### *Liquefied Petroleum Gas Bus and Forklift Rebate*

The Railroad Commission of Texas Alternative Fuels Research & Education Division (AFRED) School Bus Rebate Program applies to school buses (Model Year 2007 or newer) that incorporate an Original Equipment Manufacturer (OEM) low emission vehicle (LEV) certified LPG system. The rebate is worth 80% of the incremental cost of the LPG system, less any other grant funds used to pay for the incremental cost of the LPG system. Used OEM vehicles and LPG fuel system components are not eligible. AFRED also offers incentives to buyers of propane forklifts that meet 2004 EPA emission standards. Rebate funding is limited.

#### *Liquefied Petroleum Gas Vehicle Training*

The Railroad Commission of Texas offers free safety and maintenance training on LPG vehicles, buses, and forklifts.

## **4.9.2 Texas Laws and Regulations**

### **Renewable Fuels Standards/Mandates**

There are currently no known renewable fuels standards/mandates offered in Texas.

### **Acquisition and Use Requirements**

#### *Fuel Dispenser Labeling Requirement*

Any motor fuel dispensing equipment used to dispense motor fuel containing at least 1% ethanol or methanol must be clearly labeled to inform customers that the fuel contains ethanol or methanol. Motor fuel dispensing equipment

used to dispense motor fuel containing at least 10% ethanol or 5% methanol must also state the percentage of ethanol or methanol by volume. Motor fuel dealers must inform customers of ethanol and methanol fuel content upon request. (Reference House Bill 2278, 2007, and Texas Statutes, Agriculture Code, Section 17.051)

### **Renewable Fuels Promotion**

There are currently no known renewable fuels promotion opportunities offered in Texas.

### **Fuel Taxes**

#### *Ethanol and Biodiesel Production Fee*

Ethanol and biodiesel producers are subject to a fee of \$0.032 per gallon of ethanol or biodiesel produced in each registered production facility, imposed by the Texas Department of Agriculture. For the purpose of this regulation, ethanol is defined as ethyl alcohol that is at least 99% pure ethanol by volume that meets American Society of Testing and Materials (ASTM) specification D4806. Biodiesel is derived from vegetable oils, rendered animal fats, or renewable lipids or a combination of those ingredients, and meets the requirements of ASTM PS 121, the provisional specification for biodiesel. (Reference Texas Statutes, Agriculture Code, Section 16.001 and 16.005)

#### *Liquid Petroleum Gas Tax*

Motor fuel taxes for LPG vehicles are collected through annual sticker permit fees based on the registered gross vehicle weight rating and mileage driven the previous year. (Reference Texas Statutes, Tax Code, Section 162.305)

### **Initiatives/Commissions/Task Forces**

#### *Provision for Establishment of Hydrogen Program*

The Texas Department of Transportation (TxDOT) is authorized to seek funding to acquire and operate hydrogen vehicles and establish and operate publicly-accessible hydrogen refueling stations. TxDOT is required to ensure that data on emissions from the vehicles, refueling stations, and related hydrogen production are monitored compared with data on emissions from control vehicles with internal combustion engines that operate on fuels other than hydrogen. TxDOT must report the results of this monitoring, analysis and comparison to the Texas Commission on Environmental Quality. (Reference Texas Statutes, Transportation Code, Section 201.618)

#### *Energy Plan*

The Texas Energy Planning Council, facilitated by the Railroad Commission of Texas, was created in November 2003 to advise the Governor on a balanced plan to provide the energy needed to fuel Texas' future economic growth and prosperity. The final report, Texas Energy Plan 2005: Energy Security for a Bright Tomorrow, was submitted to the Governor in January 2005. The report identifies gaps between the state's energy supply and energy demand and recommends a plan to close or minimize these gaps. The Council explored ways to diversify future energy supplies through liquefied natural gas, nuclear and clean coal technology as well as through renewable energy sources such as wind power, biomass, and fuel cells. (Reference Executive Order RP 29, 2003)

#### *Alternative Fuel Vehicle Program Support and Technician Training*

The Texas State Energy Conservation Office's (SECO) Alternative Fuels Program initiatives include providing administrative support for the DOE's Clean Cities program and the EPA's Clean School Bus Program, grant writing training for public and private entities, and funding for training and certification program development to educate mechanics on the technical aspects of alternative fuel vehicles. SECO promotes the reduction of petroleum use through four technology areas: fuel blends, fuel economy, hybrid electric vehicles, and idle reduction. (Reference Texas Statutes Section 2305.035)

### **Other Regulations**

#### *Idle Reduction Requirement*

Idling of any vehicle for more than five minutes from April through October is prohibited in the cities of Austin, Bastrop, Elgin, Lockhart, Round Rock, and San Marcos, and the counties of Bastrop, Caldwell, Hays, Travis, and Williamson. Exemptions apply under certain conditions, such as for vehicles weighing 14,000 pounds gross vehicle

weight rating or less. Vehicles may idle for up to 30 minutes for bus passenger comfort or transit operations. Fines vary by jurisdiction. (Reference Texas Administrative Code 30.114.512)

#### *Heavy-Duty Idle Reduction Requirement*

No driver using a vehicle's sleeper berth may idle the vehicle in a school zone or within 1,000 feet of a public school during its hours of operation. A penalty of up to a \$500 fine applies. This restriction expired September 1, 2009. (Reference Senate Bill 12, 2007, and Texas Statutes Health & Safety Code, Section 382.0191)

#### *Neighborhood Electric Vehicle Access to Roadways*

NEVs may only be used on roads that have a posted speed limit of 35 miles per hour or less. NEVs must comply with the safety standards in Title 49 of the Code of Federal Regulations, section 571.500. (Reference Texas Statutes, Transportation Code, Sections 551.301 to 551.303)

### **4.9.3 Texas Utilities/Private Incentives**

#### *Electric Vehicle Rebates*

Central Texas Clean Cities and Austin Energy offer an EV rebate to Austin Energy customers who purchase qualifying EVs, electric scooters, or electric bicycles from approved dealers. Applicants may receive rebates of \$250 for all-electric vehicles including neighborhood electric vehicles, \$100 for all-electric scooters, and \$50 for all-electric bicycles. Rebate funding is limited and valid until March 31, 2009.

#### *Natural Gas Vehicle and Forklift Rebate*

The Texas Gas Service Conservation Program offers a \$2,000 rebate for the purchase of a natural gas vehicle or conversion of a gasoline powered vehicle to operate on natural gas (maximum of five vehicles per customer), and a \$1,000 rebate for the purchase of a natural gas forklift. This incentive is for commercial and residential customers in the city of Austin with specific gas rate codes. Conversions must be done by a center that is certified by the Railroad Commission of Texas.

#### *Alternative Fuel Vehicle Grants*

Congestion Mitigation and Air Quality (CMAQ) Program Grants are available through the Houston-Galveston Area Council, via the Greater Houston Regional Clean Cities Coalition, for up to 75% of the incremental cost for new original equipment manufacturer clean fuel vehicle purchases, and clean fuel vehicle conversions/repowers. This grant is for government and private entities in the eight-county Houston-Galveston non-attainment area.

#### *Natural Gas Infrastructure Technical Assistance*

Atmos Energy offers preliminary feasibility studies for compressed natural gas refueling stations and vendor selection on a case-by-case basis.



## 4.10 VERMONT

Vermont provides a tax credit to promote the research and development of alternative fuels and advanced vehicles. In addition, policymakers have passed laws and regulations that study alternative fuels, including biofuels. Currently, Vermont does not offer any tax incentives or exemptions. Below is a more detailed description of each policy and/or program that Vermont offers.

### **Notable Vermont Policy Levers**

The Vermont Department of Agriculture, Food and Markets is developing an economic initiative to provide business and technical assistance for research and planning to aid farmers in developing business enterprises that harvest biomass, convert biomass to energy, or produce biofuels such as biodiesel and ethanol.

### **4.10.1 Vermont State Incentives**

#### **Tax Incentives**

##### *Alternative Fuel and Advanced Vehicle Research and Development Tax Credit*

Vermont businesses that qualify as a high-tech business involved exclusively in the design, development, and manufacture of alternative fuel vehicles, hybrid electric vehicles, and electric vehicles (EVs) or energy technology involving fuel sources other than fossil fuels, are eligible for up to three of the following tax credits: (1) payroll income tax credit; (2) qualified research and development income tax credit; (3) export tax incentive; (4) small business investment tax credit; and (5) high-tech growth tax credit. Certain limits and restrictions apply. (Reference Vermont Statutes Title 32, Chapter 151, Section 5930k)

#### **Tax Exemptions/Grants, Rebates, Loans and Other Funding**

There are currently no tax exemptions/grants, rebates or loans offered in Vermont.

### **4.10.2 Vermont Laws and Regulations**

#### **Renewable Fuels Standards/Mandates**

There are currently no known renewable fuels standards/mandates offered in Vermont.

## **Acquisition and Use Requirements**

### *Fuel Efficient Vehicle Acquisition Requirements*

A Climate Neutral Working Group (Working Group) was established in an effort to reduce greenhouse gas emissions from state government operations. As part of this effort, all state government agencies, offices, and departments are directed to purchase the most fuel-efficient vehicles available in each vehicle class according to specifications set by the Working Group. The Working Group is directed to consider vehicles that meet high fuel economy standards and provide lower total overall emissions of greenhouse gases, criteria pollutants, and hazardous air contaminants. This directive expires on July 1, 2020. (Reference Executive Order 14-03, 2003)

### *Alternative Fuel Vehicle Acquisition Requirements*

The Commissioner of the Vermont Department of Buildings and General Services must consider AFVs when purchasing vehicles for state use, provided that the alternative fuel is suitable for the vehicle's operation, is available in the region where the vehicle will be used, and is competitively priced with conventional fuels. (Reference Vermont Statutes Title 29, Chapter 49, Section 903)

## **Renewable Fuels Promotion/Fuel Taxes**

There are currently no renewable fuels promotion opportunities/fuel taxes in place in Vermont.

## **Initiatives/Commissions/Task Forces**

### *State Agency Energy Plan Transportation Requirements*

The Secretary of Administration is responsible for developing and overseeing the implementation of a State Government Agency Energy Plan. The plan must be modified as necessary and re-adopted by the Secretary on or before January 15 of each fifth year after 2005. The plan encourages the investigation of the environmental and economic feasibility of replacing the use of conventional diesel fuel with appropriate biodiesel blends. Additionally, all vehicles purchased for inclusion in the Vermont State Fleet must be among the most fuel-efficient and lowest emission vehicle models in each class. This includes a purchasing preference for appropriate advanced technology vehicles including hybrid electric vehicles. Furthermore, the Secretary, in coordination with the Vermont Agency of Transportation, Department of Buildings and General Services, Agency of Natural Resources, will expand education and tracking of vehicle engine anti-idling campaigns pertaining to state fleet vehicles and private sector vehicles operating on state-owned property. (Reference Vermont Statutes Title 3, Chapter 45, Section 2291)

### *Biodiesel Use Study*

The Vermont Department of Buildings and General Services, Public Service Board, and Agency of Transportation must submit a report to the state legislature with recommendations for increasing the use of biodiesel in the state vehicle fleet. The report must include recommendations for using biodiesel blends of at least 5% (B5) in the transportation fleet by December 31, 2009, and at least 10% (B10) by 2012. (Reference Senate Bill 209, 2008)

### *Greenhouse Emissions Study*

The Vermont Agency of Transportation was directed to submit a report by December 15, 2008 to the state legislature on the role of motor vehicles in contributing to air emissions in the state and determine what portion of overall statewide energy consumption is attributable to motor vehicle use. The report must also include recommendations to encourage and reward energy-efficient transportation, reduce greenhouse gas emissions generated by the transportation sector, support alternative modes of transportation, and promote public education on clean and efficient transportation options. (Reference Senate Bill 350, 2008)

### *Agricultural Economic Development Plan for Biofuels*

The Vermont Department of Agriculture, Food and Markets will develop an economic initiative to provide business and technical assistance for research and planning for farmers. This initiative will aid farmers in developing business enterprises that harvest biomass, convert biomass to energy, or produce biofuels such as biodiesel and ethanol. It will also provide implementation assistance to leverage other sources of capital to assist farmers in purchasing equipment, technology, or other assistance to produce agricultural energy, harvest biomass, or convert biomass to energy. In addition, it will provide business, technical and implementation assistance to non-farmers to develop and implement technology or development of facilities designed to produce agricultural energy, harvest

biomass, convert biomass to energy, provided the non-farmer is working in conjunction with a Vermont farm. Additional conditions may apply. (Reference Vermont Statutes Title 6, Chapter 209, Section 4710)

### **Other Regulations**

#### *Idle Reduction Requirement*

Contingent on guidelines set by the Vermont Board of Education, school bus operators may not leave engines running, or idle the engine, while waiting for children to board or exit the bus, and may not start the engine until ready to leave the school premises. State Board of Education rules may allow idling when defrosting, heating, or cooling the bus is necessary for the health and safety of the driver and passengers. (Reference Vermont Statutes Title 23, Chapter 13, Section 1282f)

#### *Neighborhood Electric Vehicle Access to Roadways*

An NEV is defined as an electric vehicle that is designed to be, and is, operated at speeds of up to 25 miles per hour (mph) and conforms to the minimum safety equipment requirements as adopted in Title 49 of the Code of Federal Regulations, section 571.500. An NEV may only be used on roads that have a posted speed limit of up to 35 mph. (Reference Vermont Statutes Title 23, Chapter 1, Section 4, and Chapter 13, Sections 1007a and 1043)

### **4.10.3 Vermont Utilities/Private Incentives**

#### *Natural Gas Vehicle Incentives*

Vermont Gas Systems will provide technical assistance on a case-by-case basis to customers wishing to purchase and operate NGVs.

## **5 INTERNATIONAL AND REGIONAL LEVERS<sup>19</sup>**

### **5.1 CANADIAN LEVERS**

#### **5.1.1 Renewable Fuel Standard<sup>20</sup>**

The Canadian government passed Bill C-33, which amended the Canadian Environmental Protection Act of 1999 and established a Renewable Fuel Standard. This bill modifies the fuel provisions of the Environmental Protection Act by establishing the power for the federal Cabinet to regulate the minimum levels of biofuel content in commercial fuels. This legislative power enables the Cabinet to effectuate the government's previously stated goal of requiring the use of 5% renewable content in gasoline by 2010 and 2% renewable content in diesel fuel and heating oil by 2012 throughout all of Canada. Additionally, Bill C-33 permits producers and importers of small amounts of fuel to be exempt from certain restrictions placed on them, thereby encouraging small-scale biofuel production.

#### **5.1.2 Cessation of Coal Use at Certain Electricity Generation Stations<sup>21</sup>**

On August 24, 2007, Ontario enacted Regulation 496/07, which eliminates the use of coal to generate electricity at four generating stations within Ontario. The regulation mandates that the operators of the Atikokan, Lambton, Nanticoke, and Thunder Bay generating stations ensure that coal is not used to generate electricity at their respective facility after December 31, 2014. (Reference Ontario Regulation 496/07)

#### **5.1.3 Renewable Fuel Standard (Alberta)<sup>22</sup>**

In December 2008 Alberta introduced a Renewable Fuel Standard as part of its Provincial Energy Strategy. Similar to the national Renewable Fuel Standard, the Alberta standard requires that by 2010, all gasoline sold contains 5% ethanol, and all diesel sold contains 2% renewable content. The standard also mandates that the emissions generated during the production lifetime of the renewable fuel be at least 25% lower than the emissions generated during the production of its non-renewable counterpart. (Reference House of Commons Bill C-33, Ontario Regulation 496/07, Provincial Energy Strategy, Alberta Renewable Fuel Standard)

### **5.2 REGIONAL LEVERS**

#### **5.2.1 Regional Greenhouse Gas Initiative (CT, DE, ME, MD, MA, NH, NJ, NY, RI, VT)<sup>23</sup>**

The New York RGGI regulations have multiple avenues that may increase the use of biofuels. The first is through retail "voluntary renewable energy purchases" (VREP), which includes electricity generated from biomass, biogas, liquid-biofuel (ethanol, biodiesel, methanol and bio-oil) made from eligible biomass. The New York State Department of Environmental Conservation (NYSDEC) allots 700,000 tons of CO<sub>2</sub> allowances annually that can be retired through VREPs. Additionally, CO<sub>2</sub> emissions attributable to the burning of eligible biomass can be deducted

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<sup>19</sup> The Regional Biofuels Promotion Plan is taken from the DOE Website. All other levers in this section are from other sources as noted.

<sup>20</sup> See Bill C-33: An Act to amend the Canadian Environmental Protection Act, 1999, [http://www2.parl.gc.ca/Sites/LOP/LegislativeSummaries/Bills\\_ls.asp?lang=E&ls=c33&source=library\\_prb&Parl=39&Ses=2](http://www2.parl.gc.ca/Sites/LOP/LegislativeSummaries/Bills_ls.asp?lang=E&ls=c33&source=library_prb&Parl=39&Ses=2) (summary).

<sup>21</sup> See Ontario Regulation 496/07, [http://www.e-laws.gov.on.ca/html/regs/english/elaws\\_regs\\_070496\\_e.htm](http://www.e-laws.gov.on.ca/html/regs/english/elaws_regs_070496_e.htm).

<sup>22</sup> See Bill C-33 (note 21 above); Ontario Regulation 496/07 (note 22 above); Provincial Energy Strategy, [http://www.energy.alberta.ca/Org/pdfs/AB\\_ProvincialEnergyStrategy.pdf](http://www.energy.alberta.ca/Org/pdfs/AB_ProvincialEnergyStrategy.pdf); Alberta Renewable Fuel Standard, <http://www.energy.alberta.ca/BioEnergy/1516.asp>.

<sup>23</sup> See New York Public Service Commission's Order on Customer-Sited Tier Implementation, issued and effective June 28, 2006, [http://www3.dps.state.ny.us/pscweb/WebFileRoom.nsf/Web/59800CDF0A43451285257199005402E4/\\$File/380\\_03e0188\\_06\\_2\\_8\\_06.pdf](http://www3.dps.state.ny.us/pscweb/WebFileRoom.nsf/Web/59800CDF0A43451285257199005402E4/$File/380_03e0188_06_2_8_06.pdf); 6 NYCRR Part 242 - CO<sub>2</sub> Budget Trading Program.

from the budget source's total CO<sub>2</sub> emissions. This reduces the cost of producing electricity from eligible biomass relative to other carbon producing forms of electricity generation that still require CO<sub>2</sub> allowances for their emissions generated. The NYSDEC may also award CO<sub>2</sub> allowances to project sponsors that have reduced or avoided CO<sub>2</sub> emissions through projects that meet the requirements of the offset provisions.

### **5.2.2 Regional Biofuels Promotion Plan [Midwestern Governors Association] (IA, IN, KS, MI, MN, OH, SD, WI)<sup>24</sup>**

Indiana, Iowa, Kansas, Michigan, Minnesota, Ohio, South Dakota, and Wisconsin have formed a compact adopting the Energy Security and Climate Stewardship Platform (Platform), which establishes shared goals for the Midwest region, including increased biofuels production and use. Specifically, the Platform sets the following goals:

- Produce commercially available cellulosic ethanol and other low-carbon fuels in the region by 2012;
- Increase E85 availability at retail fueling stations in the region to 15% of stations by 2015, 20% by 2020, and 33% of all fueling stations in the region by 2025;
- Reduce the amount of fossil fuel that is used in the production of biofuels by 50% by 2025;
- By 2025, at least 50% of all transportation fuels consumed by the Midwest will be from regionally produced biofuels and other low-carbon transportation fuels.

### **5.2.3 Regional Biofuels Corridor Program<sup>25</sup>**

The Energy Security and Climate Stewardship Platform establishes a regional biofuels corridor program. This program, comprised of the members of the Midwest Governors Association as well as Manitoba, Canada, directs state transportation, agriculture, and regulatory officials to develop a system of coordinated signage across the region for biofuels and advanced transportation fuels and to collaborate to create regional E85 corridors. The program requires standardized fuel product coding at fueling stations as well as increased education for retailers about converting existing fueling infrastructure to dispense E85. The state transportation, agriculture, and regulatory officials were required to report their corridor implementation plans to the Midwest Governors Association by April 1, 2008.

### **5.2.4 West Coast Global Warming Mitigation Initiative (CA, OR, WA)<sup>26</sup>**

The Governors of Washington, Oregon, and California approved a series of recommendations for action to combat global warming, as detailed in the West Coast Governors' Global Warming Initiative. It was determined that Oregon, California, and Washington must act individually and regionally to reduce greenhouse gases. The initiative includes adopting standards to reduce greenhouse gas emissions from vehicles by expanding markets for efficiency, renewable energy and alternative fuels, including creating a working group on hydrogen fuel.

### **5.2.5 Northeast and Mid-Atlantic Low Carbon Fuel Standard – Memorandum of Understanding<sup>27</sup>**

On December 30, 2009, 11 states – Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Vermont, Rhode Island, and Pennsylvania – signed a Memorandum of Understanding (MOU) committing themselves to working toward a low carbon fuel standard (LCFS). Generally speaking, LCFS policies are market-based mechanisms designed to reduce “carbon intensity through the use of low-carbon fuel alternatives.” Through this MOU, these states have agreed to take steps to develop this program. Most notably, they agree to

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<sup>24</sup> Department of Energy's Alternative Fuels and Advanced Vehicles Data Center, [http://www.afdc.energy.gov/afdc/incentives\\_laws.html](http://www.afdc.energy.gov/afdc/incentives_laws.html).

<sup>25</sup> See Energy Security and Climate Stewardship Platform for the Midwest, 2007, <http://www.midwesterngovernors.org/Publications/EnergyPlatform.pdf>.

<sup>26</sup> See West Coast Global Warming Mitigation Initiative, <http://www.ef.org/westcoastclimate/>.

<sup>27</sup> See Northeast States for Coordinated Air Use Management, Memorandum of Understanding and Factsheet, <http://www.nescaum.org/topics/low-carbon-fuels>.

“determine the lifecycle carbon intensity of fuels based on the best available science and analyses, and to include *non-de minimis* direct and indirect emissions, such as those from land use changes attributable to fuel production.”

Table N-1. Spreadsheet Summary of Policies

SUMMARY OF STATE LEVERS	CA	IA	KY	MA	MI	OH	PA	TN	TX	VT	NY
<b>TYPES OF STATE INCENTIVES</b>											
<b>Various Tax Incentives</b>											
Alternative Fuel and Advanced Vehicle R&D Tax Credit										•	
Alternative Fuel Production Tax Incentives		•	•				•				
Alternative Fueling Infrastructure Tax Credit											•
Biodiesel Production and Blending Tax Credit			•								
Biodiesel Tax Credit		•									
Biofuel Production Tax Credit											•
E85 Retailer Tax Credit		•				•					
Ethanol Production Tax Credit			•								
Ethanol Promotion Tax Credit		•									
Hybrid Electric Vehicle R&D Tax Credit					•						
Service Station Tax Credit					•						
<b>Tax Exemptions</b>											
Alternative Fuel R&D Tax Exemption					•						
Alternative Fuel Development Property Tax Exemption					•						
Cellulosic Biofuel Tax Exemption				•							
Ethanol and Biodiesel Blend Tax Exemption									•		
Liquefied Petroleum Gas Excise Tax Exemption			•								
Reduced Biofuels Tax					•						

Biodiesel Investment Account	•										
Biodiesel Production Incentive								•			
Clean Vehicle and Equipment Grants									•		
Compressed Natural Gas Taxi Funding											•
Fuel Cell Development Funding						•					
Heavy Duty Emission Reduction Funding	•					•					
Heavy Duty Natural Gas Vehicle Grants									•		
Idle Reduction Incentives	•							•			
Renewable Energy Grants (and loan guarantees)								•			
<b>Other</b>											
Alternative Fuel Research & Development	•								•		
Alternative Fuel Research & Development Promotion	•	•	•								
Alternative Fuel Technical Assistance											•
Alternative Fuel Vehicle Emissions Inspection Exemptions						•					
AFV and Fueling Infrastructure Technical Assistance											•
Alternative Fuel and Vehicle Promotion				•							
Alternative Fuel Vehicle Rebate Program	•										
Biomass/Renewable Energy Incentives				•							
Infrastructure Development Program									•		
Liquefied Petroleum Gas Bus and Forklift Rebate									•		
Liquefied Petroleum Gas Vehicle Training									•		
Natural Gas Fuel Rates and Alternative Fuel Promotion									•		
State Alternative Fuels Plan	•										
<b>TYPES OF STATE LAWS AND REGULATIONS</b>											
<b>Promotion</b>											
Agricultural Economic Development Plan for Biofuels										•	
Alternative Fuel Vehicle Program Support	•										
Alternative Fuel Vehicle Prog. Support and Technician Training									•		

<b>SUMMARY OF STATE LEVERS</b>	<b>CA</b>	<b>IA</b>	<b>KY</b>	<b>MA</b>	<b>MI</b>	<b>OH</b>	<b>PA</b>	<b>TN</b>	<b>TX</b>	<b>VT</b>	<b>NY</b>
Alt. Fuel Veh. Emissions Inspection Exemptions					•						
AFV and Fueling Infrastructure Technical Assistance											•
Alternative Fuel and Vehicle Promotion			•								
Alternative Fuel Vehicle Rebate Program	•										
Biomass/Renewable Energy Incentives			•								
Infrastructure Development Program								•			
Liquefied Petroleum Gas Bus and Forklift Rebate									•		
Liquefied Petroleum Gas Vehicle Training									•		
Natural Gas Fuel Rates and Alt. Fuel Promotion									•		
State Alternative Fuels Plan	•										
<b>TYPES OF STATE LAWS AND REGULATIONS</b>											
<b>Promotion</b>											
Agricultural Economic Development Plan for Biofuels										•	
Alternative Fuel Vehicle Program Support	•										
Alternative Fuel Veh. Prog. Support and Tech. Training									•		
Biodiesel Use Study										•	
Biofuels Incentives Study				•							
Biofuels Production Mandate and Alt. Fuel Use Study	•										
Biofuels Production Promotion								•			
Biofuels Strategy and Outreach Campaign								•			
Biofuels Use and Promotion Study				•							
Greenhouse Emissions Study										•	
Plug-In Hybrid Electric Vehicle Promotion							•				
Provision for Establishing an Alt. Fuel R&D Program								•			
Provision for Establishment of Hydrogen Program									•		
Renewable Fuels Promotion and Education		•									

SUMMARY OF STATE LEVERS	CA	IA	KY	MA	MI	OH	PA	TN	TX	VT	NY
<b>Fuel Standards</b>											
Biofuels Specifications	•										
Biofuels Specifications/Inspection								•			
Hydrogen Specifications	•										
Low Emission Vehicle Standards											•
Low-Carbon Fuels	•										
Renewable Fuel Labeling Requirement		•									
Renewable Fuel Standard		•									
<b>Acquisition and Use Requirements</b>											
Alternative Fuel and Fuel-Efficient Vehicle Use Reqs.								•			
Alternative Fuels Plan	•										
Alternative Fuel Use Requirement											•
Alternative Fuel Vehicle Acquisition Requirements											•
Biodiesel Blend Mandate				•							
Biodiesel Decal and Fuel Use		•									
Biodiesel Retail and Storage Requirements					•						
Biofuels Blender Requirements					•						
Biofuels Use	•										•
Biofuels Use Executive Order			•								
E85 Exclusivity Contract Regulations		•									
Emission Reduction Requirements	•										
Ethanol Blended Fuel Use Requirement		•									
Flexible Fuel Vehicle Acquisition Requirement		•									
Fuel Dispenser Labeling Requirement									•		
Procurement of Designated Biobased Products		•									
State Energy Plan Alternative Fuel Requirements			•								
Veh. Acquis. and Alt. Fuel Use Reqs. for State Veh.	•	•	•	•	•	•	•	•		•	•
Vehicle Emissions and Fuel Economy Requirements											•

SUMMARY OF STATE LEVERS	CA	IA	KY	MA	MI	OH	PA	TN	TX	VT	NY
<b>Registration</b>											
AFV Conversion Registration		•									
Electric Vehicle Registration Fee		•									
<b>Tax Laws (not incentives)</b>											
Alternative Fuel Tax Exemption											•
Alternative Fuels Tax	•						•				
Compressed Natural Gas Tax and Permit								•			
Liquid Petroleum Gas Tax								•	•		
<b>State Initiatives/Committees</b>											
Alternative Fuel Fueling Infrastructure Feasibility Study											•
Biodiesel Committee							•				
Energy Task Force								•			
Green Government Initiative – Biofuels Task Force		•									
Hydrogen Energy Plan	•										
Renewable Fuels Commission					•						
State Energy Plan				•			•			•	
Texas Energy Planning Council									•		
<b>Other</b>											
Alternative Fuel Vehicle Conversion						•					
Alternative Fuel Vehicle License Fee	•										
Clean Energy				•							
Emission Reduction Non-Attainment Fee	•										
Ethanol and Biodiesel Production Fee									•		
Fuel Exclusivity Contract Regulation											•
Global Warming Solutions Act	•										

<b>SUMMARY OF STATE LEVERS</b>	<b>CA</b>	<b>IA</b>	<b>KY</b>	<b>MA</b>	<b>MI</b>	<b>OH</b>	<b>PA</b>	<b>TN</b>	<b>TX</b>	<b>VT</b>	<b>NY</b>
Green Communities				•							
Heavy Duty Idle Reduction Requirement	•								•		•
High Occupancy Vehicle Lane Exemption	•							•			•
Hydrogen Production and Retail Requirements					•						
Idle Reduction Requirement				•					•	•	•
Liquefied Petroleum Gas Liability Immunity								•			
Low-Speed Vehicle Access to Roadways	•	•						•			
Low-Speed Vehicle Definition											•
Natural Gas Deregulation			•	•							
NGV and Infrastructure Rebates and Technical Assistance											•
Neighborhood Electric Vehicle Access to Roadways									•	•	
School Bus Idle Requirement	•										
Zero Emission Vehicle Production Requirements	•										
<b>Regional Efforts</b>											
Regional Biofuels Promotion Plan		•			•	•					
Regional Greenhouse Gas Initiative				•						•	
West Coast Global Warming Mitigation Initiative	•										