WGA Transportation Fuels Council

2009 Progress Report to Western Governors

Western Governors' Association
June 2009

To the Western Governors:

We are pleased to report the great progress that has been made in the Western states since the Western Governors' Association released its 2008 report, "Transportation Fuels for the Future." This demonstrates that the Western states have continued to prioritize alternative fuels as a means to encourage economic development, keep transportation fuels affordable, increase our energy security, and reduce greenhouse gases. As the report notes, there is no silver bullet to the challenges that we face. This is apparent in the actions taken by the states to encourage alternative fuel pathways.

The WGA Transportation Fuels Council was established in 2008 following the Governors adoption of the policy resolution, ***Transportation Fuels for the West: A Roadmap for Energy Security and Improving the Environment and the Economy****. The council has been meeting regularly over the past year to share ideas and discuss regional issues. Those conversations resulted in the identification of key issues that need to be addressed and actions that should be taken for the region to move forward:*

- *Develop a framework to reduce greenhouse gas emissions through a performance-based standard.*
- *Provide an array of options for vehicle retrofits and conversions of existing fleets.*
- *Coordinate regional transportation fuels infrastructure corridor development.*
- *Develop a better understanding of the impacts of our energy choices on the West's water supply.*
- *Encourage uniform standards and regulations to promote product fungibility across state lines.*
- *Track and share information on transportation projects being undertaken through the American Recovery and Reinvestment Act (ARRA).*

The Council is also pleased with the direction taken by the federal government in prioritizing the development of alternative transportation fuels. Notably, ARRA provided billions of dollars of support for research, demonstration, and deployment of alternative fuels, advanced vehicle technologies and infrastructure improvements. President Barack Obama's announcement that his administration will seek increased vehicle fuel efficiency standards is also a welcome development. Increased vehicle fuel efficiency is a core component of the strategy needed to achieve the Western Governors' energy policy principles.

Evaluating our future transportation fuels creates an interesting nexus that requires the consideration of a multitude of issues. The decisions that the Western Governors make on energy will be critical in ensuring our economic, environmental and energy security vitality.

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WGA Transportation Fuels Council Co-Chair
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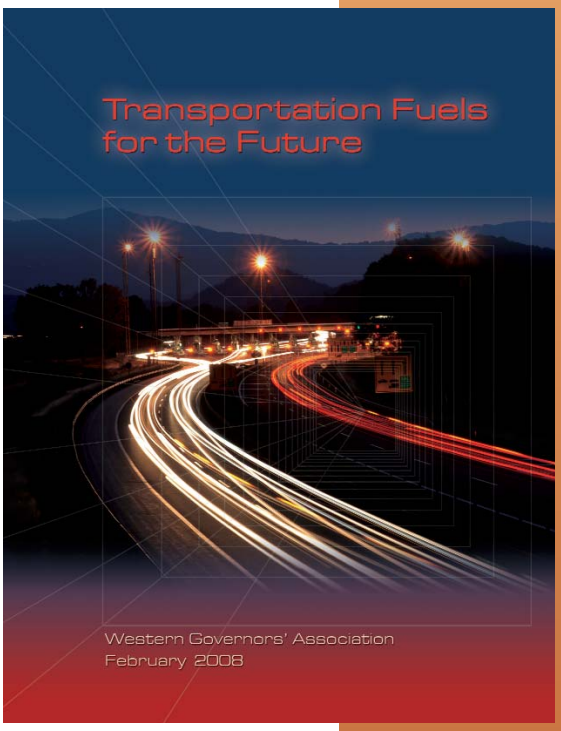
The Transportation Fuels Council would like to acknowledge and thank Lis Cohen, Utah Energy and Climate Policy Coordinator, and Alex Schroeder, WGA Transportation Fuels Program Director, for their work in developing this report.

Introduction

The Western Governors have placed a high priority on energy policies leading to the rational development of the region's full range of energy resources in support of the Nation's need for domestic energy. Recognizing that transportation fuels are a large and critical component of our energy portfolio, the Western Governors' Association adopted a resolution that called upon the Transportation Fuels Advisory Committee to examine the opportunities and challenges to increasing vehicle fuel efficiency and developing and expanding the use of alternative fuels. In February 2008, the Advisory Committee, composed of Governors' representatives, transportation experts and stakeholders, reviewed each team's report and produced an overarching policy roadmap, the ***Transportation Fuels for the Future: A Roadmap for the West***, which detailed what is technically and economically feasible and what is needed to increase the usage of alternative fuels to significantly reduce our dependence on petroleum.



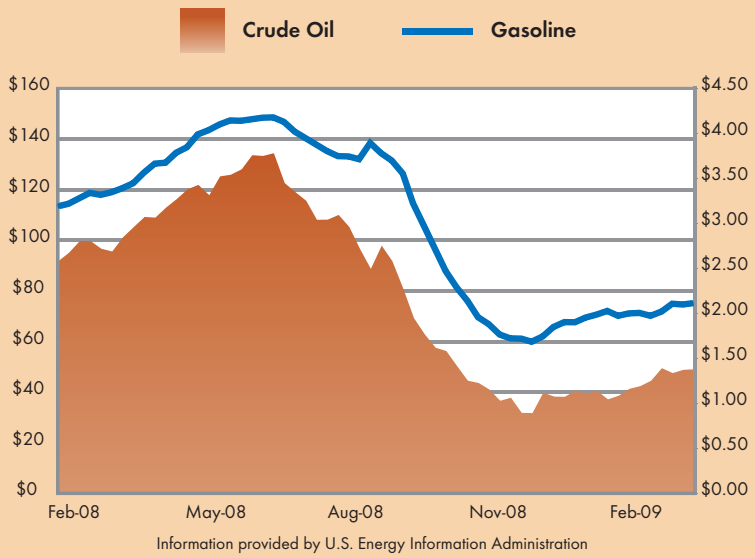
Subsequently, the Western Governors adopted a policy resolution entitled, ***Transportation Fuels for the West: A Roadmap for Energy Security*** and Improving the Environment and the Economy. In the resolution, the Governors emphasized their continued concern with our near-total dependence on petroleum for transportation fuels and the resulting critical impacts on national security, the environment and the economy. The Governors acknowledged the Western states' opportunities and challenges with alternative transportation fuels. The resolution also established a council of Governor's representatives to oversee its implementation and provide a forum for implementing regional policy recommendations and report progress back to the Governors at their 2009 Annual Meeting.

The Year in Transportation Fuels – Developments Since the 2008 Report

In a now well known story, 2008 marked the year where the U.S. and world economy experienced the most severe financial crisis since the Great Depression: petroleum prices went to an all time high of $147 a barrel, only to tumble to $39 a barrel by December; American automakers teetered on the verge of bankruptcy; unemployment rates exploded; and a new President and Congress were elected. All of these factors had an effect at both the national and state levels on efforts to develop alternative transportation fuels and increase vehicle fuel efficiency. In Detroit, both Chrysler and General Motors sought massive federal bailouts and later had to declare bankruptcy. The collapse of oil prices and the subsequent decline in the pump price of gasoline eliminated the profit margins for many alternative fuels.

Despite the severe economic downturn, developing alternative fuels and energy sources continued as a priority. This was evident in the 2008 federal elections in which presidential candidates from both parties campaigned on an ambitious program for reducing America's dependence on oil, which included promoting the adoption of biofuels for all vehicles and natural gas for fleets, requiring higher vehicle fuel efficiency and enhancing the national electricity grid to make way for plug-in electric hybrids.

Congress passed the American Economic Recovery and Reinvestment Act (ARRA) to jump start the U.S. economy and put America back to work through tax incentives, direct government investment, loan guarantees and other funding mechanisms. While emphasis is placed on projects that would provide immediate to near-term benefits to the economy and repair and update the nation's infrastructure, the Western states see the ARRA as an opportunity to further the development of alternative and renewable energy programs and are working with the federal government to develop strategies to implement its provisions.



Spot Price of Crude Oil ($/BBL) and Average Cost of Gasoline ($/Gal)

On the regulatory side, both the state of California and the U.S. Environmental Protection Agency (EPA) issued rules in the spring of 2009 that provide a framework for the development of alternative fuels: the Low Carbon Fuel Standard in the case of California and draft rules on the renewable fuel standard in the case of EPA. While both of these measures create regulatory certainty, there is still debate about their effect, particularly on biofuels, as key issues, such as indirect land use, are still being understood. In another significant development, which was noted in a letter from Western Governors to President Obama, was the announcement of increased Corporate Average Fuel Economy Standards (CAFE) beginning in 2012. Standing behind the President in support were both governors and automakers.

Despite some degree of economic uncertainty, the future is bright for the development of alternative fuels, particularly in the West. As the Governors' 2008 policy resolution states:

> *"The Western states are in position to become key producers and beneficiaries in the emerging alternative-fuels economy. We have abundant resources that have great potential as domestic sources for transportation fuels. By collaborating and leading this transition, Western states can achieve ambitious goals quicker than through individual efforts."*

The Western states will continue the march to adopt alternative transportation fuels, build out the necessary infrastructure and conduct the research and development needed to realize the region's potential for alternative fuels.

The Need for a National Energy Plan

In November 2008, the Western Governors drafted a letter to then President-elect Obama urging swift action in adopting and implementing a national energy plan. The letter proposed a number of measures to transform the country's energy infrastructure and economy, while reducing greenhouse gas emissions, and outlines policies and incentives that would help states and the country move more aggressively to develop clean and renewable energy resources that include wind, solar, biomass, geothermal, hydro and fossil fuels. The letter defined energy policy principles and goals that should be part of a national energy plan, which helped to define the work and discussions of the Transportation Fuels Council.

Energy Policy Principles

- Affordability
- Economic Development
- Energy Security
- Reduction of Greenhouse Gases

Specific to transportation fuels, the governors' recommended policies include:

- The establishment of an aggressive and achievable national greenhouse gas emissions reduction goal.
- A mandatory national system for reducing greenhouse gas emissions that maximizes the use of market-based mechanisms.
- Establishment of an oil import reduction goal that strengthens energy security and independence.
- Measures that support workforce development and clean energy jobs, adaptation to climate change impacts, reduced consumer impacts — particularly for low-income consumers — and transition assistance to industries.

The letter also calls for a substantial public and private investment in our nation's R&D portfolio to promote technologies, such as advanced vehicles, batteries, alternative transportation fuels and other technologies that fall within the energy policy principles.

Major Federal Legislation

Several major pieces of federal legislation were passed over last year that could, if adopted, significantly promote the use of alternative fuels and more fuel efficient vehicles. Following are highlights of the key provisions related to transportation fuels in three major pieces of comprehensive legislation.

2007 Energy Independence and Security Act

The 2007 Energy Independence and Security Act (EISA) was passed shortly before the Governors released their report on alternative fuels. The bill included several major provisions supported by the WGA Transportation Fuels Advisory Committee, updated federal standards, and provided incentives for alternative fueled vehicles. Specifically, EISA:

- Increased the nation's corporate average fleet economy (CAFE) standards.
- Increased the timeline and scope of the federal renewable fuels standard to set a target of 36 billion gallons by 2022. The standard also specified that certain feedstock and greenhouse gas reductions need to be met for certain quantities of the cumulative target.
- Established new requirements for energy conservation in the federal vehicle fleet and established incentives for the development of plug-in hybrid and electric vehicles and smart grid technologies.

2008 Food, Conservation and Energy Act

The 2008 Food, Conservation and Energy Act (also known as the Farm Bill) was passed as a five-year blueprint for the nation's agricultural policy. Notably, the 2008 Farm Bill:

- Increased its focus on energy and provided several incentives that would promote the development of advanced, cellulosic biofuels.
- Provided tax incentives and up to $250 million in loan guarantees for commercial- and demonstration-scale advanced biorefineries.
- Established a tax credit for the production of cellulosic biofuels.
- Set aside $118 million to support biomass R&D through 2012.

2009 American Recovery and Reinvestment Act

Many of the provisions in the $787 billion American Recovery and Reinvestment Act provided support for the development of the next generation of transportation and energy infrastructure and technologies including:

- $16.5 billion for mass transit projects.
- $1.3 billion for state, local and federal governments to purchase fleet emissions.
- $2 billion towards the development of advanced battery systems and components.
- $4.5 billion in funding to modernize the grid, research energy storage, and establish a smart gird information clearinghouse.
- $400 million to support the establishment of the Advanced Research Projects Agency-Energy (ARPA-E).
- $2.5 billion to support EERE's applied research, development and deployment activities, including $800 million for the biomass program.
- $850 million for energy workforce development programs.
- Increased tax credits for the alternative fuel infrastructure, and the purchase and conversion of electric and hybrid vehicles.

The ARRA provides many opportunities for the Western states to increase their investment in alternative fuels, supporting infrastructure, and mass transit options. Outside of federal legislation, the Western Governors have continued to prioritize the development of alternative transportation fuels in their states through a number of measures.

Western State Leadership in Promoting Alternative Fuels

The Western Governors are continuing to take the lead in their own states to implement provisions within their 2008 report and policy resolution, and they have been active in developing and implementing state policies related to transportation fuels. The number of alternative fuel vehicles and stations continues to grow in the West. State initiated research and development programs are discovering new and better fuels and testing their effectiveness through multiple pilot and demonstration programs. Examples of these are described below.

State Policy and Legislation

Production and Consumer Incentives

- The State House of Representatives in **Oklahoma** passed HB 1949, which extends an existing tax credit on the purchase of a qualified clean-burning motor vehicle for five years for compressed and liquefied natural gas and electric cars. The credit is equal to 50 percent of the cost of a conversion for vehicles to operate on a qualified fuel, as well as those that come dedicated from the factory. The bill also adds hydrogen and hydraulic hybrid vehicles to the list of qualified fuels.

- **California** has released its investment plan for the Alternative and Renewable Fuel and Vehicle Technology Program, authorized under state legislation, Assembly Bill 118. This legislation provides $176 million over the next two years for state incentives intended to compliment the Low Carbon Fuel Standard by funding alternative fuel projects which offer surplus greenhouse gas reductions which exceed the Standard. The program is to run for 7 years, with as much as $120 million per year to be appropriated to the Energy Commission for these purposes. More information can be found at: http://www.energy.ca.gov/ab118/index.html.
- The **Kansas** Development Finance Authority offers revenue bonds to cover construction costs or expansion of existing biomass-to-energy facilities. The facility must produce at least 500,000 gallons of cellulosic fuel or other form of energy that equals or exceeds the energy content of 500,000 gallons of cellulosic alcohol fuel.

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[1] *These examples are only just a sample of initiatives, executive orders and legislation that states have passed to encourage the development of alternative transportation fuels. Please refer to each state for more information on other related programs.*

- **Montana** offers a variety of incentives to promote the use of biofuels including 20 cents per gallon of ethanol produced from Montana agricultural products and a tax incentive payable to biodiesel producers of 10 cents per gallon for each gallon of increased production over the previous year.
- The **Texas** Gas Service Conservation Program offers a $2,000 rebate for the purchase of a natural gas vehicle or the conversion of an existing vehicle. Also available are $1,000 rebates for the purchase of natural gas-powered forklifts and a $2,000 rebate for supporting residential or commercial infrastructure.
- **Wyoming** offers ethanol fuel producers a tax credit of 40 cents per gallon through the state's Department of Transportation.
- The **Arizona** Biofuels Conversion Program was established in the Department of Commerce to encourage the use of biofuels in the state through the distribution of grants to promote development of fueling infrastructure. Grants will not exceed $30,000 or 40 percent of conversion costs, whichever is less.

Greening State Government

The Western Governors are leading by example when it comes to encouraging the use of alternative fuels and promoting energy efficiency and conversions. Many states have set goals or put provisions in place that encourage progress towards these objectives.

- The **New Mexico** executive branch's goal is a 20 percent reduction in fuel consumption by 2015. New Mexico's Statewide Fuel Reduction Goals as set forth in Governor Bill Richardson's Executive Order 07-053 is to reduce fuel consumption by 10 percent by 2012 and to reduce consumption by 20 percent by 2020.
- In **Oklahoma**, the State Department of Central Services purchased and is currently installing telematic) equipment on its entire fleet of monthly lease and daily rental vehicles (1,100). Telematic equipment reports and records: location, engine performance and emission compliance data real-time to the Fleet Management Division and leasing agencies. Conservative estimates provide for a savings of 48,675 gallons of fuel.
- All **Nebraska** state employees operating state fleet flexible fuel or diesel vehicles are required to use E85 or biodiesel blends whenever reasonably available.
- In **Nevada**, fleets containing 10 or more vehicles that are owned, leased or operated by the state are required to purchase alternative-fuel vehicles. Beginning in 2000 and each year thereafter, 90 percent of new vehicles obtained by these fleets were required to be alternative-fuel vehicles or ultra low emission vehicles.
- In **Montana**, all state vehicles purchased on or after January 1, 2008 must meet or exceed the current CAFE standards.
- **Colorado** Governor Bill Ritter, through executive order, established Greening Government goals, which seek to achieve a 25 percent reduction in state vehicle petroleum consumption by July 2012.

Infrastructure Development

Many state governments are taking advantage of state fleets and making investments in infrastructure to provide market certainty and create a foundation for the expanded use of alternative fuels.

- In **Idaho**, qualified biofuel fueling infrastructure is eligible for a credit of up to 6 percent of the qualified investment against the corporate income tax. The allowable credit cannot exceed 50 percent of the taxpayer's income tax liability.
- The **North Dakota** ethanol production incentive is a counter-cyclical program designed to help ethanol plants stay open during adverse economic times. Plants can receive up to $1.6 million per fiscal year and $10 million over the life of the plant. The State also recently awarded $1 million dollars for a program to help retailers install blender pumps. Retailers may qualify for up to $5,000 per pump and up to 2% of the total funds in the program.
- **Utah's** Governor Jon M. Huntsman, Jr. declared Interstate 15 as a compressed natural gas (CNG) corridor. Along this corridor, eight new compressed natural gas (CNG) stations are proposed. Many of Utah's existing CNG stations will also be increasing their capacity

Alternative Fueling Stations by State and Fuel Type

STATE	BD	CNG	E85	ELEC	HY	LNG	LPG	Totals
Alaska	1	1	0	0	0	0	10	12
Arizona	12	39	25	5	1	5	51	138
California	50	190	21	406	25	27	203	922
Colorado	23	19	74	0	1	0	45	162
Hawaii	6	0	0	3	1	0	3	13
Idaho	7	7	5	0	0	1	25	45
Kansas	5	2	33	0	0	0	44	84
Kentucky	1	0	13	0	0	0	13	27
Montana	6	3	1	0	0	0	29	39
Nebraska	3	1	48	0	0	0	18	70
Nevada	13	11	18	0	2	0	28	72
New Mexico	7	11	9	0	0	0	49	76
North Dakota	2	2	31	0	1	0	13	49
Oklahoma	7	50	8	0	0	0	64	129
Oregon	36	12	8	13	0	0	29	98
South Dakota	2	0	80	0	0	0	16	98
Texas	54	17	39	1	0	4	485	600
Utah	6	62	5	0	0	0	24	97
Washington	42	14	14	3	0	0	52	125
Wyoming	15	8	7	0	0	0	26	56
Totals by Fuel:	**695**	**781**	**1871**	**460**	**58**	**37**	**2242**	**6144**

CNG-Compressed Natural Gas, E85-85% Ethanol, LPG-Propane, ELEC-Electric, BD-Biodiesel, HY-Hydrogen and LNG-Liquefied Natural Gas.
http://www.afdc.energy.gov/afdc/fuels/stations_counts.html?print
Data current as of June 4, 2009

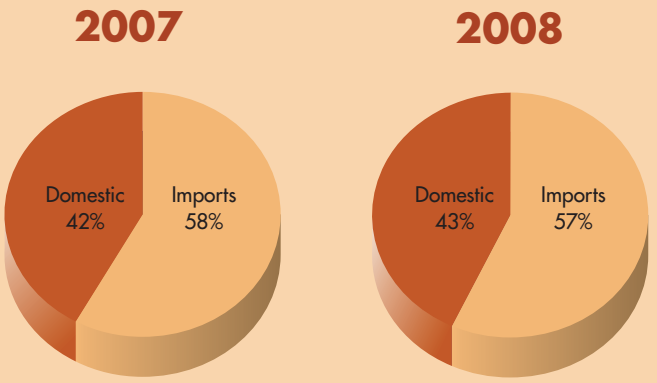
in 2009. The Utah State Grant and Loan program awarded over $414,000 to advance CNG in Utah. This funding is used for conversions, training and purchases of CNG vehicles.

- **Colorado** Governor Ritter created the Governor's Biofuels Coalition to overcome market barriers and to raise awareness for existing flex-fuel and diesel alternative-fuel options. Over 100 stations are currently open and selling E85 and/or biodiesel, 75 percent of which received support from the Coalition. In 2007, the stations reporting to the Coalition sold 2.6 million gallons of biofuels. In 2008, 8.8 million gallons were reported sold from existing and recently opened stations.
- The **Arizona** Department of Weights and Measures has been working closely with the Environmental Protection Agency and is close to an agreement on trying to reduce the permitting burden on service station owners in Maricopa County who want to install E85 fuel-dispensing equipment. The Department wrote a memo to EPA requesting a waiver from Stage II vapor recovery requirements.
- A study of statewide transit technology needs in **Alaska** is currently being conducted with the final result including a needs assessment, a concept of operations and system requirements for the short and long term.
- **Washington** allows publicly and privately owned plug-in electric vehicles (EV) to be recharged at state office locations where the vehicles are used for business involving the state or if the EV is a commuter vehicle.

Alternative Fuel Use Goals

As a way to encourage the use of alternative fuels and provide market certainty, many states have set targets for the use of alternative fuels by state fleets. Examples of actions being taken by the states include:

- **Arizona** has a mandate to make sure 75 percent of all its new vehicle purchases are capable of using alternative fuels. The state has also set a goal of procuring 40 percent of the state's fuel from alternative sources; this goal is 90 percent in Maricopa County.
- **California** has adopted petroleum reduction goals for 2012, 2017 and 2022 through a State Alternative Fuels Plan, which was required by Assembly Bill 1007 and adopted by the Energy Commission in October 2007.
- In an effort to reduce **Hawaii's** dependence on imported fossil fuels, which provides over 90 percent of the state's energy production, Gov. Linda Lingle announced a goal of having the state produce 70 percent of its energy from renewable resources by 2030.
- **New Mexico's** Environmental Improvement Board established rules to require California Clean Car Standards for model year 2011.
- Once **Oregon** ethanol production has reached 40 million gallons per year, all gasoline sold in Oregon must be blended with 10 percent ethanol. All diesel fuel sold in the state must be blended with 2 percent biodiesel; this requirement increases to 5 percent when the annual production level reaches at least 15 million gallons.



Source of U.S. Petroleum Supply 2007-2008

Table of Greenhouse Gas Reduction Goals Set by Western States					
	2012	*2020*	*2035*	*2040*	*2050*
Hawaii		1990 levels			
Oregon		10% below 1990 levels			75% below 1990 levels
Washington		1990 levels	25% below 1990 levels		50% below 1990 levels
California		1990 levels	25% below 1990 levels		50% below 1990 levels
Arizona		2000 levels		50% below 2000 levels	
New Mexico	2000 levels	10% below 2000 levels			75% below 2000 levels
Colorado		20% below 2005 levels			80% below 2005 levels
Utah		2005 levels			
Montana		1990 levels			

Greenhouse Gas Reduction Goals

- In April 2009, the California Air Resources Board adopted a low-carbon fuels standard, which calls for a reduction of at least 10 percent in the carbon intensity of California's transportation fuels by 2020.
- Seven Western states and four Canadian provinces have formed the Western Climate Initiative (WCI) to identify, evaluate and implement collective and cooperative ways to reduce greenhouse gases in the region, focusing on a market-based cap-and-trade system. WCI released its recommendations for a cap-and-trade system in the fall of 2008 and is planning to address mobile sources as part of their upcoming workplan.

Research, Development, and Demonstration Projects

Many states are working through their agencies and with universities and the federal government to develop the next generation of alternative fuel technologies. This work includes research, development, demonstration and deployment of technologies that will allow the Western states to increase their use of alternative fuels. Below are some examples of programs and projects in which Western states are currently engaged.

- **California** is funding research, development and demonstration programs aimed at the transportation sector through the California Energy Commission's Public Interest Research

Program. In 2008, California spent over $4.7 million in 2008 for two demonstration projects for biofuels production facilities and nearly $1.1 million for a variety of fuel demonstration projects relating to natural gas engines, compressed natural gas (CNG) vehicles and various studies relating to fuel and vehicle emissions. For 2008, the California Energy Commission funded two biofuels demonstration projects and five field demonstrations and technical studies related to fuel and vehicle engines and emissions.

Biofuels

- The **Idaho** Office of Energy Resources maintains a longstanding partnership with the University of Idaho who is recognized worldwide as a pioneer and leader in biodiesel research. Today the Office of Energy Resources and the University continue work to build a biofuels industry in the state. The most recent major effort is to build a pilot cellulose to ethanol plant at the Idaho Ethanol Processing Plant in Caldwell. This plant is currently the largest operating waste to ethanol plant in the nation and primarily uses potato waste. This effort is being sponsored by the Center for Advanced Energy Studies who partners with the Idaho National Laboratory and Idaho's 3 state funded universities.
- **South Dakota's** 2010 Bioprocessing Research Center is doing research on the next generation of alternative fuels, including cellulosic ethanol. The project has been funded with $1.5 million in state funding and has an additional commitment of $1 million in state funding. The 2010 Bioprocessing Research Center is leading a National Science Foundation University/Industry Research Center involving six universities and more than 30 industrial partners developing biofuels.

- **New Mexico** Energy, Minerals and Natural Resources Department along with the City of Carlsbad is partnering with New Mexico State University and Western Refining are conducting a project to investigate a cost-competitive process to produce biodiesel from microalgae. The effort focuses on the critical harvesting and extraction technologies required to make this process commercially viable and seeks to increase the scale of production to a one-quarter acre pond to allow for a determination of the economics of large-scale production.
- **Oklahoma's** Bioenergy Center was established to perform research that includes biomass development, harvest, collection and transport, conversion, and biofuels combustion in engines. The Oklahoma state legislature will provide $10 million a year to the center over four years.

- **Utah** is working on a variety of biodiesel projects. Utah State University and the Utah Department of Transportation (UDOT) head the Freeways to Fuel program. This program determines the growth and feasibility of growing oil producing crops in an un-irrigated environment on UDOT's right-of-way. Other fuels, such as switchgrass and animal waste, are being studied in Utah for biodiesel use. Utah is also working on algae biofuels projects, including a project on algae carbon recycling.
- **South Dakota** company POET began its cellulosic ethanol demonstration project in Scotland, South Dakota in 2008. The project produces cellulosic ethanol from the corn cobs and bi-products of starch-based ethanol production. The demonstration plant has a 20,000 gallon per year production capacity.

Electric Vehicles and Infrastructure

- In **New Mexico**, the City of Albuquerque Aviation Department will install a 10 kW pole-mounted tracking solar photovoltaic system on Sunport Boulevard to charge two electric vehicles. This project will be highly visible to the millions of customers exiting the International Albuquerque Airport.
- Boulder, **Colorado** is on track to be the world's first smart grid city through an initiative by Xcel Energy and local communities. The program will implement a wide variety of technologies into the city's electric transmission system to provide for a more efficient use of electricity. As part of this project, Xcel is working with the city of Boulder to examine the impacts of electric vehicles on the grid and explore the potential vehicle-to-grid electric storage.

Natural Gas

- **California** is working towards a field demonstration of a natural gas engine that meets the 2010 NOx and particulate matter standards. The engine will use spark ignition, exhaust gas recirculation technology with three-way catalyst technology, for improved efficiency and lower costs.

Transportation System Efficiency

In addition to encouraging the use and development of alternative fuels, many states are also taking steps to increase transportation system efficiency through means such as mass transit.

- In **Utah**, transportation efficiency has increased with a commuter rail expansion project and improved bike accessibility. In December 2008, state school bus idling reduction legislation (HB146) was passed. Utah's Clean Cities launched an energy education and idle reduction awareness training for school bus drivers across the state, which reduced

idling by 24 minutes per day per bus, and 3,000 bus drivers signed pledges to reduce their idling. Utah has also challenged its residents to improve air quality with multiple campaigns, including Choose Clean Air and the Clear the Air Challenge.

- In **New Mexico**, statewide transit programs realized a 13 percent increase in ridership from fiscal year 2007 to fiscal year 2008.
- In **Alaska**, Governor Palin signed an administrative order creating a coordinated transit task force. This Administrative Order had two missions:
  1. to direct state, local and tribal governments to work together to coordinate transit, and
  2. create a statewide task force to make recommendations to the Governor and Legislature on coordinated transit issues in the state.

State Implementation of the 2009 American Economic Recovery and Reinvestment Act

As previously mentioned, the 2009 ARRA provides a great deal of funding and incentives to encourage the development of alternative fuels and critical infrastructure. States are currently busy putting together proposals to implement the provisions in the initiative and have already begun taking initial steps that ensure continued progress on the development of alternative transportation fuels. More information can be found at www.recovery.gov

Regional Initiatives

At its first meeting, the WGA Transportation Fuels Council established a set of objectives and priority actions to be addressed. These items are all in coordination with the Council's objective to work towards the implementation of the Governors' 2008 policy resolution and WGA report. Descriptions of several initiatives and projects that have been completed since February 2008 are provided below.

In the spring of 2009, WGA worked with officials in the states of Colorado and Montana to host advanced biofuels workshops. The workshops focused on advancing the recommendations made in the WGA transportation fuels report to identify actions that individual states can take to encourage the development of the next generation of biofuels. Experts from government, academia, industry and non-governmental organizations were invited to provide a diverse set of viewpoints and knowledge. WGA is exploring hosting additional workshops in other Western states.

Advanced Biofuels Workshops

Governor Brian Schweitzer speaks at the 2009 Montana Bioenergy Conference

In the spring of 2009, WGA worked with officials in the states of Colorado and Montana to host advanced biofuels workshops. The workshops focused on advancing the recommendations made in the WGA transportation fuels report to identify actions that individual states can take to encourage the development of the next generation of biofuels. Experts from government, academia, industry and non-governmental organizations were invited to provide a diverse set of viewpoints and knowledge. WGA is exploring hosting additional workshops in other Western states.

Administration Briefing Paper on Alternative Fuels

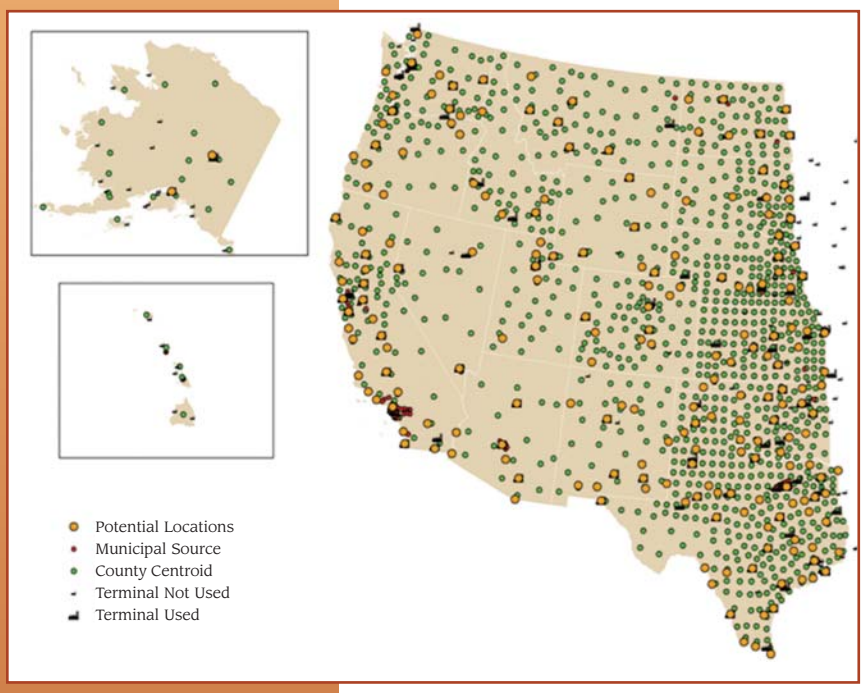
Working with the WGA Staff Council, the Transportation Fuels Council developed a briefing paper for the Obama Administration that detailed all of the work done by the Western Governors and stakeholders that were involved in WGA's Transportation Fuels for the Future Initiative. The briefing paper identified the following actions as priorities for the new Administration when considering transportation fuels policy:

- Establish an aggressive greenhouse gas reduction goal for the transportation sector that puts the U.S. on a path towards climate stabilization.
- Set a national petroleum reduction target that: increases our supply of domestic, low-carbon fuels; encourages more fuel efficient vehicles; reduces miles travelled; promotes sustainability; and minimizes technical and economic uncertainty.
- Greatly expands the nation's energy R&D portfolio to promote alternative fuels and technologies that increase our energy security and preserve our environment.
- Work with the states to coordinate the development of infrastructure and fuel standards to ensure both availability of fuels and fungibility.

National Biomass Partnership Forum on Food vs. Fuel

In August 2008, the National Biomass Partnership hosted a webinar for state officials the food vs. fuel debate surrounding the increased use of biomass for transportation fuel. Over 80 attendees joined to hear a diverse set of viewpoints and were provided the opportunity to ask questions. The partnership includes regional organizations that represent the governors' offices of all 50 states — the Western Governors' Association, Southern States Energy Board, Coalition of Northeastern Governors, and Council of Great Lakes Governors. The Partnership promotes the utilization of biomass as an energy source, increases awareness of issues surrounding its use, and provides a linkage between local, state, and federal government on issues that pertain to bioenergy development.

Western Strategic Bioenergy Assessment

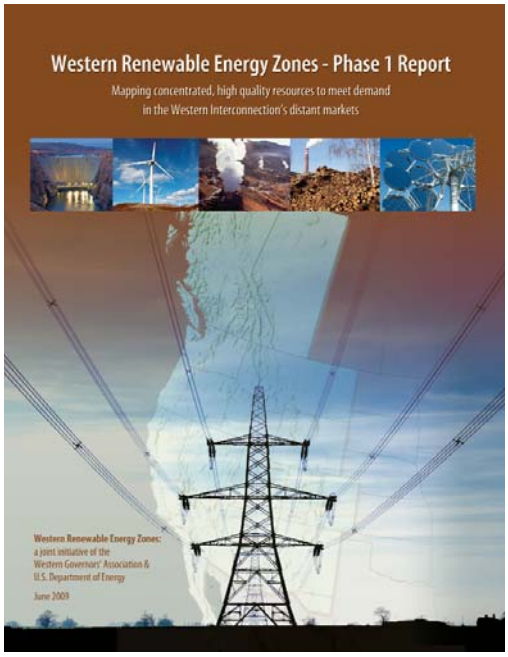


The WGA Bioenergy Assessment Team was formed to examine the potential for future bioenergy development and to create a comprehensive framework to assess environmental, technical and socioeconomic impacts associated with national, state and regional bioenergy and biomass management policies. The assessment shows that West has the potential to produce 11 billion gallons of biofuels and biodiesel per year (gasoline equivalent) by 2015; advanced bioenergy technologies make up 6.7 billion gallons of this potential. The Assessment will assist governors individually and collectively as they develop and advance bioenergy policies.

With support from the U.S. Department of Energy, the WGA Bioenergy Assessment Team is now working to adapt its model to produce a national framework, which will allow for additional analysis in the Western states and a more comprehensive and insightful framework.

Western Renewable Energy Zones

The Western Governors' Association and U.S. Department of Energy launched the Western Renewable Energy Zones (WREZ) initiative in May 2008 to identify those areas throughout the Western Interconnection that feature the potential for large scale development of renewable resources in areas with low environmental impacts. The identification of these zones in the West will expedite the development and delivery of renewable energy to where it is needed and will increase the mix of renewable resources available to plug-in vehicles.



Identification of Upcoming Issues and Recommendations for Future Action

The WGA Transportation Fuels Council has identified several persistent issues and barriers that provide opportunities for collaboration among the Western states and with the federal government. These issues and recommendations for action by the Council are presented below.

Reducing Greenhouse Gas Emissions through a Performance-based Standard

In a 2008 WGA policy resolution, the Governors stated that they would work together regionally to "develop a regional framework for a performance-based greenhouse gas standard for transportation fuels such as a low-carbon fuel standard." The Transportation Fuels Council has formed a subcommittee to address this issue and keep informed of similar programs, such as the California Low Carbon Fuels Standard and the intention of the Regional Greenhouse Gas Initiative (RGGI) states to develop a regional low carbon fuel standard. As the Governors recognized in their resolution, there are a diversity of state resources and needs in the West, and it is important to determine how flexibility can best be maintained in any performance-based greenhouse gas standard.

Actions and Recommendation: The Transportation Fuels Council recommends holding a regional forum to share information and determine how to best implement the Governors' desire to develop a regional performance-based greenhouse gas framework. The forum would produce guidance to the Governors on the necessary steps needed to develop a regional framework. These efforts would include actively engaging with other organizations that are pursuing a similar goal, such as the Western Climate Initiative and RGGI.

Continuing the Dialogue on Emerging Alternative Fuel and Vehicle Technologies

Prior to the release of the 2008 "Transportation Fuels for the Future" report, WGA held a stakeholder workshop to refine the report and provide an update on the status of various alternative fuel and vehicle technologies and policy initiatives. The workshop provided valuable insight to the WGA Transportation Fuels for the Future Advisory Committee as they were finalizing their recommendations to the Governors.

Actions and Recommendation: Given the constantly changing policy and technology environment surrounding alternative fuels and vehicles, the WGA Transportation Fuels Council recommends that WGA hold a similar forum in the coming year to advise the Council on key issues that Western Governors and the Council should be considering as they continue to encourage the development of the region's suite of transportation fuels, infrastructure and vehicle technologies. A particular area of interest includes the integration of electric plug-in vehicles to the power grid.

Establish a Clearinghouse for Western ARRA Projects

The American Economic Recovery and Reinvestment Act provides opportunities and funding to the states to improve transportation infrastructure and invest in alternative fuels and vehicles. The WGA Transportation Fuels Council can serve as a forum for states to discuss and share information and details on projects, particularly in areas that have a multi-state or regional application.

Actions and Recommendation: The Transportation Fuels Council recommends establishing a clearinghouse at WGA to share information on ongoing activities and results from projects that utilize funds provided in the ARRA. The Transportation Fuels Council will track programs and provide information regarding benefits with other Western states.

Conversion of Existing Fleets

There are many opportunities to retrofit existing infrastructure, namely existing vehicles, to accommodate alternative fuels. Conversion of existing fleets to run on alternative fuels would be an immediate step that could accelerate the commercialization of certain alternative fuels. The US EPA process of certification for conversion kits should be streamlined to expedite the process and make conversions less costly. It would also be beneficial to require original equipment manufacturers to produce more fuel efficient and alternative fuels vehicles as part of the potential automaker bailout. Additionally, more technicians must be trained to properly install certified kits.

Actions and Recommendation: The Transportation Fuels Council recommends that the Governors encourage the U.S. Environmental Protection Agency to streamline the certification process and increase its support for the study of vehicle retrofits. This would include working with auto manufacturers and other stakeholders to determine what steps need to be taken to ensure that these retrofit kits are covered under existing warranties. Federal tax credits for heavy-duty vehicle conversions could help encourage these conversions.

Infrastructure Coordination

The development of infrastructure, vehicles, and fuels has long presented a chicken and egg dilemma for policymakers. Infrastructure to support alternative fuels is currently being built out in many of the Western states and the Council recognizes the need for regional coordination to ensure fuel connectivity. Alternative fuels corridors, particularly E85 infrastructure, are a needed and immediate improvement that can be made. Full corridor development is a long-term, incremental process, but there are initial steps that can be made, such as providing access to CNG and electric plug-in access at truck stops.

Actions and Recommendation: The Transportation Fuels Council recommends that the Governors encourage the federal government to engage with the Western states on the development of regional alternative fuel corridors. This could include linking together the work already being done by DOE's Clean Cities partnerships to form interstate corridors.

Regulatory Standards and Fungibility

The continued development of a market for biofuels, as driven by the Renewable Fuels Standard (RFS), means there will be a growing need for biofuel standards and the equipment to dispense biofuels. Some standard-setting organizations have started work on meeting this demand. Their efforts are worthy of support.

The issue of fungibility must be thoroughly considered. Individual states should be encouraged to adopt similar standards. Different or varying state standards would restrict the use of biofuels across state lines, creating a barrier that would inhibit the development of a biofuels market.

Fungibility will create a more robust biofuels market. The widely varying boutique fuels in the West offer a clear example of the pitfalls that must be avoided. Another example can be seen in the equipment market, where one state might only accept equipment that it has certified, creating barriers to the expansion of new technologies and decreasing the benefits that come from economies of scale.

Action and Recommendation: State agencies responsible for enforcing fuel and equipment standards should be working with standard-setting organizations to ensure that the consumer is protected and any standard adopted will not restrict the interstate use of biofuels. As biofuel standards are set, the Western states should adopt them legislatively.

With many regulations either recently finalized or being considered, it is important that state and federal agencies are regularly communicating with each other to ensure product fungibility and avoid regulatory overlap. This would include the federal renewable fuel

standard, the California Low Carbon Fuel Standard, lifecycle impact analysis, and product standards for fuel blends and quality. It is essential that these standards and regulations are mutually reinforcing and do not inhibit the development of alternative fuels.

Water Availability

The Western Governors have consistently noted and paid great attention to the West's limited supply of water for both human consumption and industrial use. Our decisions on the fuels that will be a part of the region's energy portfolio will have a significant impact on our region's already stretched supply of water. Mindful of the effects of climate change on water availability, we must be sure that our adaptation strategies are in-line with these choices. The Western States Water Council has already done a great deal of work studying and discussing the impacts of energy and water, but this issue will require increased attention as policymakers make critical decisions about our future energy resources.

Actions and Recommendation: The Transportation Fuels Council recommends that the Governors form a task force to further explore the energy and water nexus. Realizing that this issue expands beyond transportation fuels, the Council recommends that this task force be inclusive of all forms of energy production and leverage work already done by the Western states and WGA.

Appendix A – Western Governors Energy Policy Letter to President Obama

November 20, 2008
The Honorable Barack Obama
Obama for America
P.O. Box 8102
Chicago, IL 60680

Dear President-elect Obama:

Western Governors are very concerned that during our nation's deepening energy crisis, the United States lacks an effective long-term energy policy. As you prepare to take office, we urge you not to delay in exercising the leadership necessary to ensure swift adoption and implementation of an energy plan that will provide affordable and clean energy to sustain our economy, stimulate greater energy efficiency, strengthen our energy security and independence, and reduce greenhouse gas emissions.

We believe that the United States has the ability to be the world leader in developing and implementing the innovative technologies that will be necessary to meet our energy challenge. However, the scale of the effort that will be required is enormous. Unless we make substantial investments in energy efficiency and other systemic changes, the Energy Information Administration projects that by 2030 U.S. demand for petroleum and other liquid fuels will increase by 10% while global demand will increase by 30%. In the same time period, U.S. demand for electricity is expected to increase by 20% while global demand would nearly double.

An enormous national commitment is necessary to transform our energy infrastructure and our economy as we shift to low-carbon-emission energy sources that include wind, solar, geothermal, biomass, hydro and other renewables, as well as fossil fuels with carbon capture and storage. We recognize that nuclear may be a part of the discussion of a national energy strategy. This letter does not speak to nuclear energy as WGA does not have relevant existing policy.

Transforming our energy infrastructure and economy will require new policies, incentives, market mechanisms and private-public partnerships. Most important, it will require a bipartisan partnership that achieves a broad consensus among political leaders and with the American people.

As a first step, we must promote more efficient use of energy in all of its forms. This includes:

1. *manufacturing more fuel-efficient vehicles and enhancing our public transportation systems,*
2. *wide-scale adoption of regulatory structures that reward those utilities achieving reduced energy usage among their customers, and*
3. *the design and manufacture of more energy efficient consumer goods.*

The United States faces a very serious policy and technological challenge in increasing energy security, while simultaneously reducing greenhouse gas emissions and maintaining energy expenditures at a reasonable fraction of national GDP. The challenge must be met decisively with policies that represent the best environmental and economic interests of our nation.

Western Governors recommend the following goals, principles and immediate actions as the foundation for a National Energy Policy:

Energy Policy Goals

- *Promote a more efficient use of energy throughout the economy.*
- *Reduce greenhouse gas emissions on a scale necessary to contribute to climate stabilization.*
- *Maximize the economic development opportunities offered by clean energy.*
- *Ensure that energy costs are affordable for consumers and support a sustainable, growing economy.*
- *Increase the proportion of our energy supplies that come from domestic resources and friendly trading partners.*
- *Minimize adverse environmental impacts.*

Energy Policy Principles

- *Energy security is essential; both energy efficiency to reduce demand and a diversity of energy sources and technologies must be part of the solution.*
- *Climate change is happening, so we must reduce our greenhouse gas emissions immediately and adapt to changes that cannot be avoided.*
- *A clean energy economy should focus on economic prosperity, environmental sustainability and energy affordability.*
- *A National Energy Policy must consider that global and domestic energy demand and prices are increasing.*
- *Energy delivery infrastructure development and expansion are needed to avoid supply interruptions and promote increased development of and accessibility to renewable and other clean energy sources.*
- *Transportation energy and emissions should be addressed as a system, including vehicles, fuels and transportation demand.*
- *Energy development must be done in an environmentally responsible manner.*
- *A comprehensive national framework should include clear and measurable goals, an aggressive timeframe for implementation, and certainty in how solutions will be implemented.*
- *Substantial, long-term national commitment to investment in energy technology and infrastructure is needed, in the same way our nation made a commitment to put a man on the moon.*
- *Stable long-term policies are necessary to enable public and private investment in environmentally responsible energy research, development and immediate deployment.*

While the solutions to our energy dilemma will take time to fully develop and implement, we believe that, with your leadership, our nation can set a course of action within the first 100 days of your new administration. We urge you to promptly:

1. *Establish an aggressive and achievable national greenhouse gas emissions reduction goal that will put the United States on a path to contribute to global climate stabilization.*
2. *Propose a mandatory national system for reducing greenhouse gas emissions that makes maximum use of market-based mechanisms. Revenue raised should support the energy policy principles in this letter and not be used as a means of sustaining or expanding general governmental operations.*
3. *Aggressively pursue a national energy efficiency program to reduce existing and future energy demand and thereby reduce greenhouse gas emissions.*

4. *Establish an oil import reduction goal that strengthens energy security and independence. Since nearly 90% of oil is used for transportation, propose a plan that:*
   - *Brings more fuel efficient and near-zero emission vehicles into the market;*
   - *Increases the supply of domestically produced, low-carbon fuels;*
   - *Minimizes the economic and technological uncertainties inherent in deploying high efficiency vehicles and developing and using non-petroleum transportation fuels; and*
   - *Reduces vehicle miles travelled and increases mass movement of people and goods.*
5. *Create a substantial, long-term national public investment on the scale of tens of billions of dollars annually, and encourage at least the same investment from the private sector, to support the kind of basic and applied research and deployment of clean energy technology and infrastructure that will result in:*
   - *Near-zero greenhouse gas emissions from new coal-fired electricity generation in 10 years and from existing generation no later than 2030;*
   - *Dramatically increased energy from wind, solar, geothermal, hydro and biomass resources;*
   - *Expansion and upgrade of the electricity transmission grid and storage capabilities;*
   - *Advanced vehicle and battery technologies and alternative transportation fuels; and*
   - *Next generation energy efficiency technologies and practices.*
6. *Ensure affordability for lower income energy consumers through energy efficiency and cost assistance programs.*
7. *Provide for workforce development and clean energy jobs, adaptation to climate change impacts, reduced consumer impacts, particularly for low-income consumers, and transition assistance to industries.*

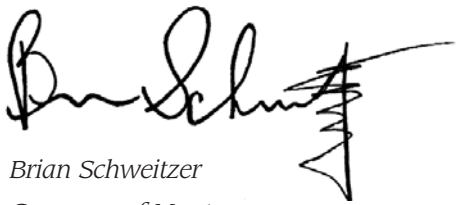
While the first 100 days are critical, these actions only represent the first steps. Within the next year, a comprehensive energy plan must be enacted that will set the direction of this nation for the next 50 years. This plan, though adjustable over time, must establish measurable goals, strategies, milestones and funding to ensure that we are moving towards affordable and environmentally responsible energy security and independence.

We must not repeat the mistakes of the past. We must have the collective political will and resolve to create and implement a long-term comprehensive energy policy despite short-term political and market fluctuations. The future of our nation depends upon it.

The Western Governors stand united and ready to work with your administration to develop and implement a strong National Energy Policy.

Sincerely,

Jon M. Huntsman, Jr.
Governor of Utah
Chairman, WGA



Brian Schweitzer
Governor of Montana
Vice Chairman, WGA

Appendix B – State Alternative Fuel Resources

Alaska
Alaska Energy Authority
http://www.akenergyauthority.org/

Arizona
Arizona Department of Weights and Measures
http://www.azdwm.gov/

California
California Energy Commission
http://www.energy.ca.gov/

Colorado
Governors' Energy Office
http://www.colorado.gov/energy

Hawaii
Hawaii Department of Business, Economic Development & Tourism
http://www.hawaii.gov/dbedt/info/energy/

Idaho
Idaho Office of Energy Resources
http://www.energy.idaho.gov/

Kansas
Kansas State Energy Office
http://www.kcc.ks.gov/energy/

Montana
Montana Department of Commerce Energy Division
http://commerce.mt.gov/energy/index.asp

Nebraska
Nebraska Energy Office
http://www.neo.ne.gov/

Nevada
Nevada State Office of Energy
http://energy.state.nv.us/

New Mexico
New Mexico Energy, Minerals and Natural Resources Department
http://www.cleanenergynm.org/

North Dakota
North Dakota Office of Energy Efficiency and Renewable Energy
http://www.communityservices.nd.gov/energy/

Oklahoma
The Office of the Secretary of Energy
http://energy.ok.gov/

Oregon
Oregon Department of Energy
http://www.oregon.gov/ENERGY

South Dakota
South Dakota Energy Management Office
http://www.state.sd.us/boa/ose/OSE_Statewide_Energy.htm

Texas
Texas State Energy Conservation Office
http://www.seco.cpa.state.tx.us/

Utah
Utah State Energy Program
http://geology.utah.gov/sep/

Washington
Washington State Department of Community, Trade and Economic Development
http://www.cted.wa.gov/site/526/default.aspx

Wyoming
Wyoming Business Council
http://www.wyomingbusiness.org/business/energy.aspx

Western Governors' Association
Transportation Fuels for the Future Program
http://www.westgov.org/wga/initiatives/transfuels/index.html

Appendix C – Acronyms

ARPA-E	Advanced Research Projects Agency-Energy
ARRA	American Recovery and Reinvestment Act
ASTM	American Society for Testing and Materials
B100	100% biodiesel
CAFE	Corporate Average Fuel Economy
CO_2	Carbon dioxide
CNG	Compressed Natural Gas
DOE	U.S. Department of Energy
E10	10% blended ethanol
EERE	U.S. Department of Energy Office of Energy Efficiency and Renewable Energy
EPA	U.S. Environmental Protection Agency
EV	Electric Vehicle
GHG	Greenhouse gas
GPS	Global positioning system
kW	Kilowatt
NHSTA	National Highway Traffic Safety Administration
NOx	Nitrogen oxides
RFS	Renewable Fuel Standard
RGGI	Regional Greenhouse Gas Initiative
UDOT	Utah Department of Transportation
WCI	Western Climate Initiative
WGA	Western Governors' Association
WREZ	Western Renewable Energy Zones

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