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**Transportation and Land Use (TLU) Technical Working Group  
Summary List of Policy Options**

	Policy Option	GHG Reductions (MMtCO <sub>2</sub> e)			Net Present Value 2007-2020 (Million \$)	Cost-Effectiveness (\$/tCO <sub>2</sub> e)	Status of Option
		2010	2020	Total 2007-2020			
TLU-1	Light Duty Vehicle Clean Car Program	<i>Not Quantified</i>					Pending
TLU-2	Fuel Efficient Replacement Tires	<i>Not Quantified</i>					Pending
TLU-3	Vehicle MPG Consumer Information	<i>Not Quantified</i>					Pending
TLU-4	Financial and Market Incentives for Low GHG Vehicle Ownership and Use	<i>Not Quantified</i>					Pending
TLU-5	Growth and Development Bundle	<i>Not Quantified</i>					Pending
TLU-6	Alternative Fuels Bundle (discuss changing to Low-Carbon Fuels Bundle)	<i>Not Quantified</i>					Pending
TLU-7	Heavy Duty Vehicle Emissions Standards and Incentives	<i>Not Quantified</i>					Pending
TLU-8	Truck Anti-Idling and Truck-stop Docking and Electrification	<i>Not Quantified</i>					Pending
TLU-9	Procurement of Efficient Fleet Vehicles	<i>Not Quantified</i>					Pending
TLU-10	Transportation System Management	<i>Not Quantified</i>					Pending

	Policy Option	GHG Reductions (MMtCO <sub>2</sub> e)			Net Present Value 2007–2020 (Million \$)	Cost-Effectiveness (\$/tCO <sub>2</sub> e)	Status of Option
		2010	2020	Total 2007–2020			
TLU-11	Vehicle Backhauling Efficiencies (discuss potential modification to scope)	<i>Not Quantified</i>					Pending
TLU-12	GHG Emissions Reductions from Off-Road Engines and Vehicles	<i>Not Quantified</i>					Pending
TLU-13	Reduced GHG Emissions from Aviation	<i>Not Quantified</i>					Pending

## TLU-1 Light Duty Vehicle Clean Car Standards

### Policy Description

Adopt the State Clean Car Program (also known as the “Pavley” standards or California GHG Emission Standards) in order to reduce GHG emissions from new light-duty vehicles. The standards, which must still be approved by US EPA, would take effect in Model Year 2011 (calendar year 2010). Other Clean Car Program elements include standards requiring reductions in smog- and soot-forming pollutants, and promoting introduction of very low-emitting technologies into new vehicles.

New cars and light trucks in all states must comply with Federal emission standards, and, generally speaking, states have the choice of adopting a stronger set of standards applicable in California. In 2005, California finalized a set of standards that would require reductions of GHG emissions of about 30% from new vehicles, phased in from 2009 to 2016, through a variety of means. Eleven states (11) already have adopted the California Clean Car Program standards: California, Connecticut, Maine, Massachusetts, New Jersey, New York, Oregon, Pennsylvania, Rhode Island, Vermont and Washington.

### Policy Design

**Goal levels:** Go beyond the federal emissions standards for cars and light trucks within the parameters of the California standards. Note: States can choose between the federal standard or go with the more stringent California standards.

**Timing:** The program would start in 2007 so that MT can implement the California standards – regulatory program could begin with vehicle model year 2011.

**Parties Involved:** Applies to MY 2011 new cars and light trucks. The law would directly affect automobile manufacturers, car dealers, and consumers. Compliance concerns would affect manufacturers and dealers.

**Other:** The California standards currently are being litigated and have not been approved by the EPA. The timing may be affected by the date of enactment of legislation, likely litigation, and the regulatory process.

### Implementation Mechanisms

New regulation.

### Related Policies/Programs in place

Under Development.

### Types(s) of GHG Reductions

Under Development.

### Estimated GHG Savings and Cost Per Ton

Under Development.

**Data Sources:** Under Development.

**Quantification Methods:** Under Development.

**Key Assumptions:** Under Development.

**Key Uncertainties**

None Cited.

**Additional Benefits and Costs**

None Cited.

**Feasibility Issues**

None Cited.

**Status of Group Approval**

Pending.

**Level of Group Support**

TBD

**Barriers to Consensus**

TBD

## TLU-2 Fuel Efficient Replacement Tire Program

### Policy Description

Improve the fuel economy of the light duty vehicle (LDV) fleet by setting minimum energy efficiency standards for replacement tires and requiring that greater information about Low-Rolling Resistance (LRR) replacement tires be made available to consumers at the point of sale. Snow and mud LRR are even available.

Manufacturers currently use LRR tires on new vehicles, but they are not easily available to consumers as replacement tires. When installing original equipment tires, carmakers use LRR tires as a way to contribute to meeting the federal automobile fuel economy standards, which is referred to as CAFE. When replacing the original tires, consumers often purchase less fuel-efficient and potentially, more costly (depending on annual vehicle miles traveled), tires. Currently, tire manufacturers and retailers are not required to provide information about the fuel efficiency of replacement tires.

An appropriate state agency would initiate a fuel efficient tire replacement program. The program would include consumer education, product labeling, and minimum standards elements.

Another state program would be introduced to buy back used tires as a waste management technique. An auxiliary program would be established to funnel the used tires to businesses that recycle tires for other non-combustible usages (e.g., asphalt and concrete components, rubber piping, playground mulch, etc.), thereby creating new economic opportunities in the state.

These programs would be developed under a rule development process. All programs would incorporate the best scientific information, including the test results of tires conducted by the tire manufacturers, the California Energy Commission, and the National Academy of Sciences.

### Policy Design

**Goals:** Establish voluntary LRR standards that achieve an average 4.5% gain in fuel economy.

#### Timing:

By 2009, the State will:

- Initiate a fuel efficient tire replacement program for the state fleet.
- Establish voluntary LRR standards for tires.
- Create state incentive programs for the installation of LRR tires, which would include tax benefits, rebates, and/or feebates.
- Develop a marketing program with the supplemental used tire applications

By 2011:

- All tires replaced on state-owned and leased vehicles will be LRR tires, if available for the vehicle type.

- Establish legislation to set LRR standards for tires with mandatory manufacture labeling.

**Parties Involved:** MT Dept. of Environmental Quality, MT Dept. of Transportation, LRR manufacturers, tire distributors, Montana University System, Headwaters Cooperative Recycling.

### **Implementation Mechanisms**

#### **Information and Education:**

- Provide general public and commercial businesses such as taxi and food delivery services that use light-duty vehicles for daily business that the improved fuel efficiency is directly related to decreased rolling resistance. Information on the potential annual costs savings using LRR tires would also be provided. For example, a car averaging 15,000 miles per year the fuel savings is over \$80 (at \$2.25 per gallon). A chart of recommended tire models would be included with information on product labeling and minimum standards elements. Best scientific information including the results from tests of tires conducted by the tire manufacturers, the California Energy Commission, and the National Academy of Sciences would be reviewed and incorporated.
- The manufacturers of the LRR tires would be contacted to encourage promotion of their relevant products through regional newspaper and television advertising. A MDEQ liaison from the Air, Energy, and Prevention Bureau, MDEQ, associated with recycling would be invaluable in these efforts. The producers of LRRs may freely provide promotional materials.
- The Headwaters Cooperative Recycling would be contacted as the likely avenue to initialize recycling of used tires. This non-profit organization has been extremely successful recycling products in Montana.

#### **Promotion and Marketing:**

- The state will lead by example by initiating a fuel efficient tire replacement program for state vehicles, both owned and leased.
- Over time, all state fleet tires that need replacement will be changed to LRR tires, if available for the vehicle type.
- Establish voluntary LRR standards that achieve an average 4.5% gain in fuel economy.
- Encourage local/county governments to act consistently with and support state procurement on their behalf.
- Encourage federal agencies located within the state to act accordingly with and support state actions.
- Encourage businesses that depend upon vehicles to conduct daily business to act accordingly with and support state actions.
- Create state incentive programs for the installation of LRR tires, which would include tax benefits, rebates, and feebates.
- Develop a marketing program with tire dealers and consumers to encourage the purchase of LRR tires. This effort might include a voluntary labeling program for tire fuel efficiency.

- Establish a program to identify alternative applications for used tires and to promote new businesses to develop/relocate/expand to Montana to utilize this new resource.
- Encourage the Montana university system to conduct research on alternative non-combustible applications for used tires.
- All state-supported programs would have dedicated, detailed web sites. In addition to information and materials, program participation by the various governmental agencies and individual businesses (i.e., success stories) would also be documented and extolled.

**Technical Assistance:** Contact the LRR manufacturers and tire distributors to coordinate objectives and obtain technical support for outreach materials.

**Funding Mechanisms and/or Incentives:**

- Replacement of tires on state fleet vehicles is already budgeted through the MDT annual funding processes.
- Funding for rebates, feebates, and/or tax credits would to be proposed through legislative action. Partial funding may be obtained from the state gasoline and diesel taxes. A feebate would be an additional cost imposed at the time of purchase of any non-LRR tire. Some monies would be obtained from the commercial businesses that recycle the used tires for alternative applications or from the state taxes paid by these businesses.
- Finally, the funding for tire shredders for the Headwaters Cooperative Recycling may be accomplished through landfill fees and state and federal waste reduction programs.

**Voluntary and or Negotiated Agreements:** Work with the manufactures and affected parties to achieve objectives with flexibility of the timelines.

**Codes and Standards:** The state of California has developed substantial information pertaining to LRR tires due to legislative actions that require tires to be replaced with more efficient ones. Associated documentation identifies testing methods and LRR standards. The appropriate state agency can review the information and establish suitable Montana standards.

**Pilots and Demonstrations:** Coordinate with product developers to help them promote their technologies.

**Reporting:** The state will develop a system for tracking purposes so that the state can eventually determine the turnover to LRR tires and the benefits achieved from the conversion. A simple tracking system would be established relatively easily by contacting the primary tire distributors of the major Montana cities on an annual basis and estimates can be gathered from their inventories.

**Enforcement:** No enforcement actions are necessary initially since this is a voluntary program. After the mandatory labeling becomes in effect, spot checks at the primary tire distributors in the main Montana cities would be annually conducted by the county health departments and the state staffs.

### **Related Policies/Programs in place**

The 1997 Montana Legislature approved Senate Bill 332 (SB 332), which amended the Solid Waste Management Act, establishing financial assurance requirements for new waste tire recycling or disposal facilities (MCA 75-10-216).

In October of 2003, the state of California adopted the world's first fuel-efficient replacement tire law (AB 844). This law directed the California Energy Commission to develop a State Efficient Tire Program that includes the following issues: (1) develop a consumer education program, (2) require that retailers provide labeling information to consumers at the point of sale, and (3) promulgate through a rule development process a minimum standard for the fuel efficiency of replacement tires sold. The California rule development process is scheduled to begin in January 2007.

### **Types(s) of GHG Reductions**

Under Development.

### **Estimated GHG Savings and Cost Per Ton**

Under Development.

**Data Sources:** Under Development.

**Quantification Methods:** Under Development.

**Key Assumptions:** Under Development.

### **Key Uncertainties**

None Cited.

### **Additional Benefits and Costs**

None Cited.

### **Feasibility Issues**

None Cited.

### **Status of Group Approval**

Pending.

### **Level of Group Support**

TBD

### **Barriers to Consensus**

TBD

## TLU-3 Consumer Information on Vehicle Miles Per Gallon (MPG)

### Policy Description:

Provide consumers with information about the fuel efficiency in relation to the purchase, maintenance, and operation of their vehicles. Consumers would receive real-time information on the miles per gallon (MPG) while their vehicles are in operation and alerts when their tire pressure is too low (e.g., devices like Air Alert Valve Caps). In addition, consumers would receive public education and information relating to the impact that vehicle maintenance practices have on the operation of their vehicles. Finally, consumers would be encouraged to consider the MPG of vehicles before and at the time of purchase of their vehicles.

### Policy Design:

**Goal levels:** Increase consumer awareness by 100% by 2020.

**Timing:** Program would begin in 2008, with program expansion as resources are made available.

**Parties Involved:** MT Dept. of Environmental Quality, MT Dept. of Transportation, DMV, product manufacturers, product distributors, Montana University System.

### Implementation Mechanisms

**Information and Education:** The manufacturers of such energy saving technologies (i.e. Scan Gauge, Air Alert Valve Cap, etc.) would be contacted to encourage promotion of their relevant products through regional newspaper and television advertising in addition to working with potential distributors (auto shops, car dealerships, electronic stores) to provide information about the products. In addition to these technologies, vehicle maintenance and operations that have effects on the fuel efficiency of private vehicles can also be implemented in Driver Education Courses.

### Promotion and Marketing:

- The state will lead by example by initiating a consumer information program for energy efficient driving practices and devices for all state vehicles, both owned and leased.
- Establish consumer information standards for both add-on technologies and original equipment that provide real-time MPG information, tire pressure valves, early and late engine check warnings lights, etc.
- Encourage local/county governments to act consistently with and support state procurement on their behalf.
- Encourage federal agencies located within the state to act accordingly with and support state actions.
- Encourage businesses that depend upon vehicles to conduct daily business to act accordingly with and support state actions.

- Create state incentive programs for the installation of energy saving technologies, which would include tax benefits, rebates, and feebates.
- Develop a marketing program with vehicle and product manufacturers and consumers to encourage the purchase of energy saving technologies. This effort might include a voluntary labeling program for “green purchases.”
- Encourage the Montana university system to conduct research on energy saving technologies and its effects on changing consumer behavior.
- All state-supported programs would have dedicated, detailed web sites. In addition to information and materials, program participation by the various governmental agencies and individual businesses (i.e., success stories) would also be documented and extolled.

**Technical Assistance:** Contact the product manufacturers and distributors to coordinate objectives and obtain technical support for outreach materials.

**Funding Mechanisms and/or Incentives:** Under Development.

**Voluntary and or Negotiated Agreements:** Work with the manufactures and affected parties to achieve objectives with flexibility of the timelines.

**Codes and Standards:** The appropriate state agency can review the technical and feasibility information and establish suitable Montana standards.

**Pilots and Demonstrations:** Coordinate with product developers to help them promote their technologies both on the shelf and on the internet.

**Reporting:** The state will develop a system for tracking purposes so that the state can eventually determine the effects on consumer choices and driving behavior and the benefits achieved from the consumer information program. A simple tracking system would be established relatively easily by contacting the primary vehicle dealerships and auto shops of the major Montana cities on an annual basis and estimates can be gathered from their inventories.

**Enforcement:** No enforcement actions are necessary initially since this is a voluntary program. After the mandatory labeling becomes in effect, spot checks at the primary vehicle dealerships and auto shops in the main Montana cities would be annually conducted by the county health departments and the state staffs.

#### **Related Policies/Programs in place**

Under Development.

#### **Types(s) of GHG Reductions**

Under Development.

#### **Estimated GHG Savings and Cost Per Ton**

Not estimated. GHG emissions reduction estimates to be incorporated into analysis of other policy options.

**Data Sources:** Under Development.

**Quantification Methods:** Under Development.

**Key Assumptions:** Under Development.

**Key Uncertainties**

None Cited.

**Additional Benefits and Costs**

None Cited.

**Feasibility Issues**

None Cited.

**Status of Group Approval**

Pending.

**Level of Group Support**

TBD

**Barriers to Consensus**

TBD

## TLU-4 Financial and Market Incentives for Low GHG Vehicle Ownership and Use

### Policy Description

Several components may be studied and developed under this option that would create financial incentives for the purchase and operation of vehicles that emit lower levels of GHG. The CCAC recommends that Montana further study and develop policy options that create incentives and disincentives for the purchase and operation of vehicles with varying fuel economy. The range of policies to be studied and developed include:

- **Feebates.** A multi-state “feebate” program, including the other western states including Arizona, New Mexico, Colorado, California, Oregon, and Washington. Feebate proposals usually have two parts: (a) a fee on relatively high emissions/lower fuel economy vehicles, and (b) a rebate or tax credit on low emissions/higher fuel economy vehicles.
- **GHG-based Excise Taxes.** A change in new vehicle excise taxes that increases taxes for relatively high-emitting vehicles and reduces taxes for relatively low-emitting vehicles. Overall, excise tax revenue would remain the same.
- **Vehicle Registration Fees.** The state would give local counties and cities the authority to vary local registration fees in order to maintain incentives for the ownership and use of light duty vehicles. The purpose of the varying fees would be to maintain incentives use and ownership of low GHG vehicles.
- **Increased Fuel Tax.** Increases in fuel taxes would be considered in order to fund other programs that reduce GHG emissions from the transportation sector.
- **Other light duty vehicle operational use incentives.** The state of Montana would consider other incentive programs not otherwise listed in order to provide a financial and/or market incentive for low-GHG operation and ownership of light duty vehicles.

Taken together, these incentives could change the vehicle fleet technology mix through a combination of demand- and supply-side changes.

### Policy Design

**Goal levels:** Prepare a detailed study of options and impacts.

**Timing:** Complete in 2008.

**Parties Involved:** Industry, MT DMV, MT Department of Taxation and Revenue.

### Implementation Mechanisms

Existing analysis shows that 90% of the benefits of feebate programs are likely to arise from the manufacturing (supply side) response rather than the consumer (demand side) response. Because individual states such as Montana have a small share of the national new vehicle market and thus are unlikely to have a significant influence on the supply side by themselves, western states have

been exploring coordinated multi-state programs. A consistent set of feebate programs across multiple states may include a large enough share of the US market to have a more significant effect on supply side decisions made by automobile manufacturers.

With that in mind, incentives and disincentives that should be studied and developed include:

- **Feebates.** A “Multi-State LDV GHG Fee and Rebate Study and Pilot Program” would consider the expected impacts of individual state feebate programs as well as coordinated or consistent multi-state programs. Ideally, such a multi-state study would include a number of western states in order to assess boundary issues as well as coordination issues. Initial analysis suggests that the Montana new car market may be too small a share of the market to have an effect on the types of vehicles that manufacturers put into the marketplace. A consistent set of feebate programs across multiple states may include a large enough share of the US market to have a more significant effect on supply side decisions made by automobile manufacturers. The study would also identify and assess the actual benefits and costs of a pilot feebate program to be implemented at the county or metropolitan level in the western United States.
- **Excise Taxes.** Examine options similar to Bill 2438 in the 2005 Massachusetts legislature<sup>1</sup> which directs the Secretary of Taxation and Revenue to set a variable excise tax on new passenger vehicles ranging from 0 to 10 percent, based on the vehicle’s CO<sub>2</sub> emission rate. The tax would be lowest on the lowest emitting vehicles and highest on the highest emitting vehicles, subject to certain guidelines and constrained by maintaining the current average excise tax of 3% (an annual adjustment of the schedule of taxes would maintain this average). One option would be to link the excise tax structure so that it is set at zero for vehicles that comply with the European Union GHG standards.<sup>2</sup> New Mexico currently has a zero excise tax for hybrid cars.
- **Labeling.** Examine options similar to an EU program begun in 2001, and a recent proposal by a researcher at Resources for the Future.<sup>3</sup> It would require dealers to place a GHG label on each new vehicle that includes the estimated amount of CO<sub>2</sub> (in pounds) produced annually and places the vehicle into one of five distinct groupings from “best” to “worst.”

### Related Policies/Programs in place

While feebate proposals have been described in academic studies, there has been no implementation of a full feebate program in the United States. While there are individual ‘gas guzzler tax’ and tax incentives for hybrid vehicle purchases, there is not yet any history of an on-the-ground example of a comprehensively implemented feebate program.

### Types(s) of GHG Reductions

Under Development.

<sup>1</sup> See <http://www.mass.gov/legis/bills/house/ht02/ht02438.htm>.

<sup>2</sup> For a discussion of EU standards, see *Pew Center, Comparison of Passenger Vehicle Fuel Economy & GHG Emission Standards Around the World, 12/04*, at [http://www.pewclimate.org/global-warming-in-depth/all\\_reports/fuel\\_economy/index.cfm](http://www.pewclimate.org/global-warming-in-depth/all_reports/fuel_economy/index.cfm), pp. 11-12.

<sup>3</sup> See <http://www.rff.org/rff/News/Features/Combating-Global-Warming-One-Car-at-a-Time.cfm>.

### **Estimated GHG Savings and Cost Per Ton**

Not estimated. Following the study called for here, the State could develop quantifiable options.

**Data Sources:** Under Development.

**Quantification Methods:** Under Development.

**Key Assumptions:** Under Development.

### **Key Uncertainties**

Both the United States Department of Energy and the Canadian Transport Ministry have studied the potential impacts of national level feebate programs in recent years. While these studies have informed the debate about the advantages and disadvantages of national feebate programs, there remains considerable uncertainty about the potential benefits and costs of state or multi-state level feebate programs. There is an important need for a greater understanding of the potential effects of single state or multi-state feebate programs on the types of vehicles that manufacturers put into the marketplace.

### **Additional Benefits and Costs**

None Cited

### **Feasibility Issues**

None Cited.

### **Status of Group Approval**

Pending.

### **Level of Group Support**

TBD

### **Barriers to Consensus**

TBD

## TLU-5 Growth and Development Bundle

### Policy Description:

This bundle of options encompasses five components related to reducing GHG emissions through promotion of multi-modal transit options and land use practices and policies. These policies contribute to GHG emission reductions by reducing vehicle trips and total vehicle miles traveled.

Potential actions include the following programs and program elements:

- Infill and Brownfield redevelopment.
- Transit-oriented development.
- Smart growth planning, modeling, and tools
- Targeted open space protection
- Expanding transit infrastructure and service

### Policy Design:

Under Development.

**Goal levels:** Under Development.

**Timing:** Under Development.

**Parties Involved:** Under Development.

### Implementation Mechanisms

None Cited.

### Related Policies/Programs in place

Under Development.

### Types(s) of GHG Reductions

Under Development.

### Estimated GHG Savings and Cost Per Ton

**Data Sources:** Under Development.

**Quantification Methods:** Under Development.

**Key Assumptions:** Under Development.

### Key Uncertainties

None Cited.

**Additional Benefits and Costs**

None Cited.

**Feasibility Issues**

None Cited.

**Status of Group Approval**

Pending.

**Level of Group Support**

TBD

**Barriers to Consensus**

TBD

## TLU-6 Alternative Fuels Bundle

*(Discuss possibility of changing to “Low-Carbon Fuels Bundle,” with California policy as model. Such a policy would be more ‘fuel neutral’ than the ‘alternative fuels’ framework. Since the policy is more performance oriented, many fuel sources and ‘feedstocks’ may be able to meet the standards and goals of such a policy.)*

### Policy Description

This policy option seeks to increase market penetration of biofuels in Montana by a mixture of policies (voluntary and/or mandatory) to achieve feasible goals. Offset fossil fuel use (gasoline) with production and use of starch-based and cellulosic ethanol.

Offsetting gasoline use with ethanol can reduce GHGs to the extent that the ethanol is produced with lower GHG content. Use of biodiesel offsets the consumption of diesel fuel produced from oil (fossil diesel). Since biodiesel has a lower GHG content than fossil diesel, overall GHG emissions are reduced.

The elements of a strategy to increase alternative fuels use would include:

- Fuel Quality Standards.
- Low Carbon Fuel Standards.
- State Government Fleet ‘Leadership’ Programs for adoption of Alternative Fuels.
- Alternative Fuel Infrastructure Development.

### Policy Design

Under Development.

**Goal levels:** Under Development.

**Timing:** Under Development.

**Parties Involved:** Under Development.

### Implementation Mechanisms

None Cited.

### Related Policies/Programs in Place

Under Development.

- All gasoline sold to consumers for use in motor vehicles used on the public roads must be blended with “E10” – 10% by volume, agriculturally derived, denatured ethanol. This requirement takes effect within one year after the Montana Department of Transportation has certified that the state has produced 40 million gallons of ethanol and has maintained that level of production on an annualized basis for at least 3 months. If the production of

ethanol in Montana drops below 20 million gallons on an annualized basis, the 10% blend requirement does not apply. All gasoline sold as E10 may not contain more than trace amounts of the additive methyl tertiary-butyl ether, or MTBE. (Reference Montana Code Annotated 82-15-121.)

- Montana based ethanol producers are entitled to a tax incentive of \$0.20 per gallon of ethanol that are completely produced from Montana products, or if the ethanol was produced from non-Montana agricultural products when Montana products were unavailable. The amount of the tax incentive for each gallon is reduced proportionately, based upon the amount of agricultural or wood products not produced in Montana that are used in the production of the ethanol. The tax incentive is available to a facility for the first six years from the date that production begins. Ethanol eligible for the incentive must be blended with gasoline for sale as gasohol in Montana, exported from Montana to be blended with gasoline for sale as gasohol, or used in the production of ethyl tertiary-butyl ether for use in reformulated gasoline.
- An ethanol distributor is not eligible to receive the tax incentive unless at least 20% of Montana product is used to produce ethanol at the facility in the first year of production, 25% of Montana product is used the second year, and the amount of Montana product used each year thereafter must increase by 10% annually. (Reference Montana Code Annotated 15-70-522.)
- A tax credit is available to businesses and individuals for up to 15% of the cost of storage and blending equipment used for blending biodiesel with petroleum diesel. The amount of the credit may not exceed \$52,500 for a special fuel distributor and \$7,500 for an owner or operator of a motor fuel outlet. The credit can only be claimed in the year in which the taxpayer begins blending biodiesel for fuel or sale.
- A licensed distributor who pays the special fuel tax on biodiesel may claim a refund equal to \$0.02 per gallon of biodiesel sold during the previous quarter if the biodiesel is created entirely from biodiesel ingredients produced in Montana. The owner or operator of a retail motor fuel outlet may claim a refund equal to \$0.01 per gallon of biodiesel purchased from a licensed distributor if the biodiesel is created entirely from biodiesel ingredients produced in Montana. (Reference Montana Code Annotated 15-70-369 and 15-70-703.)
- A tax credit is available to businesses and individuals for up to 15% of the cost of constructing and equipping a facility to be used for biodiesel production. The credit must be claimed in the tax year in which the facility begins production, and the facility must be in operation before January 1, 2010. Additionally, a tax credit is available for property used to crush oilseed crops for purposes of biodiesel production. (Reference Montana Code Annotated 15-32-701 and 15-32-702.)
- A tax incentive payable to biodiesel producers is available for increases in annual biodiesel production for the first three years of production in the amount of \$0.10 per gallon for each gallon of increased production over the previous year. For the purposes of this incentive, the production year begins July 1. This tax incentive is available until July 1, 2010. (Reference [Montana Code Annotated](#) 15-70-601.)

**Types(s) of GHG Reductions**

Under Development.

**Estimated GHG Savings and Cost Per Ton**

Under Development.

**Data Sources:** Under Development.

**Quantification Methods:** Under Development.

**Key Assumptions:** Under Development.

**Key Uncertainties**

None Cited.

**Additional Benefits and Costs**

None Cited.

**Feasibility Issues**

None Cited.

**Status of Group Approval**

Pending.

**Level of Group Support**

TBD

**Barriers to Consensus**

TBD

## TLU-7 Heavy Duty Vehicle GHG Emissions Standards and Incentives

### Policy Description

The state of Montana would seek to work with other states and the U.S. Environmental Protection Agency (EPA) to advance greenhouse gases (GHG) emissions standards for on-road heavy-duty vehicles. The state would also advance incentive programs to encourage the use of lower GHG emissions heavy-duty vehicles. The state would also adopt programs to encourage the early retirement of older, less efficient engines and vehicles.

A number of approaches to diesel emission reductions include diesel repower and replacement programs, installation of particulate filters or traps, installation of diesel oxidation catalysts such as selective catalytic reduction, and installation of other exhaust after treatment technologies. Types of vehicles retrofit under these programs include heavy-duty trucks, motor coaches, and transit and school buses.

### Policy Design

**Goal levels:** The state would lead by example by initiating a diesel retrofit program for the state-owned and leased vehicle fleet to eventually reaching a minimum of 80% of fleet.

#### Timing:

- The state would lead by example by initiating a diesel retrofit program for the state-owned and leased vehicle fleet by 2009.
- By 2009, a voluntary diesel retrofit program will be established by a state agency. Information packages would be developed about the health effects of air pollutants on human health, particularly on children. The program would create incentive options and marketing strategies, track retrofit and research activities, and spearhead the progression of on-road heavy-duty GHG emissions standards with other states and the EPA.
- Incentive options will be available for consumers by 2011.

**Parties Involved:** MT Dept. of Transportation, MT Dept. of Environmental Quality, Local Governments, MT Metropolitan Planning Organizations, relevant industries (utilities, parcel delivery services, etc.), public and private educational institutions/organizations, MT Public Health Department, Montana University System.

### Implementation Mechanisms

- The appropriate state agency would establish a voluntary program to retrofit diesel engines in a rebate program. Users of heavy-duty diesel engines, who retrofit with emission controls, would also qualify for a credit against Montana income or business taxes (whichever is relevant) to a percentage (such as 25%) of the retrofit costs. Some retrofits reduce emissions of black carbon, which contribute to the greenhouse effect.
- A number of voluntary approaches to diesel emission reductions have proven successful throughout the United States and, in contrast to regulatory measures, are less onerous and

cumbersome than compliance with regulatory measures. These include diesel re-power and replacement programs, installation of particulate filters or traps, installation of diesel oxidation catalysts, and installation of other exhaust after treatment technologies. In combination with cleaner fuels, such as ultra-low sulfur or emulsion fuels, emission reductions are optimized. The types of equipment and vehicles retrofit under these programs can include: heavy-duty trucks, forklifts, bucket loaders, tractors, wheel loaders, refuse trucks, transit and school buses, and others.

- The state would encourage communities to establish local ordinances requiring retrofitting of heavy-duty vehicles including garbage and construction trucks. In addition, transit companies contracted by the public school system to transport students, regardless of the purpose (daily transport, sporting events, educational trips, etc.) would also be required to participate in the retrofit programs.
- Encourage the EPA to initiate the development of new emission standards for heavy-duty vehicles for other GHG.
- The state and some counties have the regulatory authority to require air pollution control measures in areas designated by the EPA as “nonattainment” for air pollution under the federal Clean Air Act. Exhaust emissions from engine combustion can be identified through technical studies and targeted by state or county air pollution control measures.

**Promotion and Marketing:**

- Encourage local/county governments to act consistently with and support state actions.
- Encourage federal agencies located within the state to act accordingly with and support state actions.
- The state will develop information packages about the effects of air pollutants in diesel emissions on human health, particularly on children.
- Implement a voluntary diesel retrofit program by an appropriate state agency.
- Encourage transit companies contracted with a public school district to act accordingly with and support state actions. Educational information will be provided by a state agency about health effects of air pollutants from diesel emissions on children’s health to both the transit companies and the public education system.
- Assist in the development of on-road heavy-duty vehicles GHG standards with other states and the EPA.
- Encourage the Montana university system to conduct research on on-road heavy-duty vehicles GHG standards and reduction emissions technologies.
- All state-supported programs would have dedicated, detailed web sites. In addition to information and materials, program participation by the various governmental agencies and individual businesses (i.e., success stories) would also be documented and extolled.

**Technical Assistance:**

- Contact the manufacturers of the various diesel emission reductions technologies to coordinate objectives and obtain technical support for outreach materials.

- The EPA created the Retrofit Technology Verification Process. This program evaluates the emission reduction performance of retrofit technologies, including their durability, and identifies engine operating criteria and conditions that must exist for these technologies to achieve those reductions.
- The EPA has also developed the Voluntary Diesel Retrofit Program to address pollution from diesel construction equipment and heavy-duty vehicles that are currently on the road. Program information is available to help fleet operators, air quality planners in state/local government, and retrofit manufacturers to create effective retrofit projects.

**Funding Mechanisms and or Incentives:**

- Funding for rebates, feebates and/or tax credits would be proposed through legislative action. The owners of the retrofitted heavy-duty diesel engines would qualify for a credit against Montana income or business taxes (whichever is relevant) to a percentage of the retrofit costs (tax credit). Another option is feebates incurred as part of the engine maintenance costs, which would be based on the age of the engine.
- Funding may be available through the EPA Voluntary Diesel Retrofit Program and/or the EPA funding programs to reduce air toxics at the local level. Also refer to ‘Related Policies/Programs in Place’ for more possible funding avenues.
- The Montana university system can obtain applicable grant funding independently.

**Voluntary and/or Negotiated Agreements:** Work with regulated entities to promote voluntary compliance assistance through distribution of materials, staff training, etc. Encourage participation in EPA’s National Clean Diesel Campaign.

**Codes and Standards:** Refer to the information provided in the previous sections.

**Pilots and Demonstrations:** Coordinate with product developers to help them promote their technologies.

**Reporting:** The state will develop a tracking system so that the emissions reductions from the application of heavy-duty diesel replacement technologies can be derived. The state can annually contact the primary shipper companies in the main Montana cities to gather estimates from their inventories.

**Enforcement:** No enforcement actions are necessary since this is a voluntary program. However, the EPA will penalize any manufacturer who does not comply with their standards.

**Related Policies/Programs in place**

- Mitigation and Air Quality Improvement (CMAQ) Program: A heavy-duty diesel engine retrofit can be an eligible for CMAQ funds, but the vehicle must operate predominantly within or in close proximity to an EPA designated air quality nonattainment or maintenance area, and primarily benefit those areas. If the truck is privately owned, CMAQ funding would be contingent upon meeting the public-private partnership provisions of the guidance. Funds under the program also may be used for school bus programs in nonattainment and maintenance areas to retrofit or replace engines with the latest technologies that reduce emissions.

- On December 21, 2000, the EPA signed emission standards for model year 2007 and later heavy-duty highway engines (the California Air Resources Board adopted virtually identical 2007 heavy-duty engine standards in October 2001). The rule included two components: (1) emission standards, and (2) diesel fuel regulation. The rule focused on particulate matter (PM) and nitrous oxides. The stringent standard for PM will take in effect in the 2007 heavy-duty engine model year. The nitrous oxides standard for diesel engines will be phased in between 2007 and 2010.
- A new energy law enacted in August 2005 created a national program to clean up older diesel engines. The legislation, known as the Diesel Emissions Reduction Act or DERA, provides federal funding to help finance voluntary retrofit incentive programs (through both grants and loans) at both the national and state level.
- The EPA has also developed the Voluntary Diesel Retrofit Program with a designated web site. The program addresses pollution from diesel construction equipment and heavy-duty vehicles that are currently on the road today. The program web site is designed to help fleet operators, air quality planners in state/local government, and retrofit manufacturers understand this program and obtain the information they need to create effective retrofit projects. Funding will depend upon the President's FY07 budget.
- In addition, the EPA also has created the National Clean Diesel Campaign (NCDC). The NCDC will work aggressively to reduce the pollution emitted from diesel engines across the country through the implementation of varied control strategies and the aggressive involvement of national, state, and local partners.
- In 2001, California created the California Climate Action Registry (CCAR), a voluntary, nonprofit registry organization for GHG emissions. The CCAR accepts voluntary reports of GHG emissions from a variety of participants including utilities, businesses, industry, government agencies, and educational institutions. The CCAR uses a reporting protocol based on the one developed by the World Resources Institute and the World Business Council for Sustainable Development. The two unique aspects of the registry are third party certification of emissions is required and an online reporting tool, which simplifies the process.
- The Northeast States for Coordinated Air Use Management developed the Eastern Climate Registry (formerly referred to as "RGGR"), which is modeled from California's efforts. This program provides technical support for state's voluntary and mandatory GHG reporting programs by developing reporting software, establishing guidelines and procedures of regional voluntary GHG reporting, and determining how the Eastern Climate Registry should be linked with other GHG registry programs in the US and abroad.

### **Types(s) of GHG Reductions**

Under Development.

### **Estimated GHG Savings and Cost Per Ton**

Under Development.

**Data Sources:** Under Development

**Quantification Methods:** Under Development.

**Key Assumptions:** Under Development.

**Key Uncertainties**

None Cited.

**Additional Benefits and Costs**

None Cited.

**Feasibility Issues**

None Cited.

**Status of Group Approval**

Pending.

**Level of Group Support**

TBD

**Barriers to Consensus**

TBD

## TLU-8 Heavy Duty Vehicle Anti-Idling/Truck Stop Docking/Electrification

### Policy Description

This policy option involves reducing the amount of time that vehicles idle, and by promoting and expanding the use of technologies that reduce long-term heavy-duty vehicle idling, with an emphasis on encouraging the use of innovative truck stop electrification through local and statewide anti-idling actions. Anti-idling control measures reduce fuel consumption and emissions from stationary freight vehicles including greenhouse gases (GHG).

Develop and implement a statewide ordinance banning idling by heavy-duty vehicles in most situations. The state would also set up truck stop electrification stations at key truck stops and truck rest areas along major highways. Local ordinances may be necessary as the first step.

For clarification, truck stop electrification involves truck plazas that are equipped with electrification systems that allow drivers to shut off their engines and draw electrical power and in some cases, heating, cooling, and communication and entertainment options from a ground source. Different systems may or may not require the purchase of an adaptor to connect to the tractor. In addition to truck stop electrification, other available technologies that reduce heavy-duty vehicle idling include automatic engine shut down/start up system controls and auxiliary power units that include direct fired heaters.

Auxiliary power units are portable, truck-mounted systems that can provide climate control and power for trucks without idling. These systems generally consist of a small internal combustion engine (usually diesel) equipped with a generator and heat recovery system to provide electricity and heat. For air conditioning, an electrically powered air-conditioner unit is normally installed in the sleeper, although some systems use the truck's air-conditioning system. Direct fired heaters provide only heat to the cabin and engine.

Statewide and local ordinances would be developed and implemented banning idling by heavy-duty vehicles in most situations. The ordinances would be designed to be easily enforceable by the appropriate state and local agencies. The ordinances would also need to limit exemptions as much as possible, to make it easier to enforce. However, idling that occurs for public health and safety reasons (such as emergency vehicles) would be exempted from this rule.

A dedicated state funding stream for enforcement would be identified in order for this measure to be successful in reducing vehicle idling and the resulting reductions in GHG emissions.

Transit companies contracted by the public school system to transport students with heavy-duty vehicles, regardless of the purpose (daily transport, sporting events, educational trips, etc.), will be responsible for developing their own truck plazas equipped with electrification systems to limit idling emissions as established by the appropriate state agency.

Charter bus services will also be encouraged to install their own truck plazas equipped with electrification systems.

## Policy Design

### Goal levels:

- Reduce fuel consumption from heavy-duty diesel vehicle idling at rest areas and truck stops in two steps: 40% in Phase I and 85% in Phase II.
- Require 85% of the transportation services contracted with a public school district to transport students using heavy-duty vehicles to have in-house electrification systems to reduce fuel consumption and emissions from idling.

### Timing:

- Establishment of local ordinances will be strongly supported by the state, but local governments will need to determine their time schedules.
- Installation of electrification systems at rest areas by 2010.
- Installation of electrification systems at truck stops by 2011.
- Have statewide ordinance in place by 2011 with relevant documentation available for distribution.
- The two-stage time periods for the reduction in heavy-duty diesel vehicle idling are 2010 (Phase I) and 2020 (Phase II).
- Transportation services contracted with a public school district and uses heavy-duty vehicles to transport students must have electrification systems installed by 2011.

**Parties Involved:** MT Dept. of Environmental Quality, MT Dept. of Transportation, communities, counties, MT Metropolitan Planning Organizations, relevant public educational parties, trucking companies and drivers, truck stop owners/managers, trucking associations and unions (for out-of-state truckers), chartered bus service companies.

## Implementation Mechanisms

- The appropriate state agency would provide the general public, trucking industry, trucking associations, out-of-state trucker driver unions, and bus companies with information (with a phone number to answer questions) indicating when and where (specified by a map) idling is prohibited, and under what circumstances it is permitted. The benefits of reducing idling, including fuel savings, toxic emission reductions, and GHG reductions would be detailed. A round-the-clock hotline number to call to report violations would also be given.
- The state and some counties have the regulatory authority to require air pollution control measures in areas designated by the U.S. Environmental Protection Agency (EPA) as “nonattainment” for air pollution under the federal Clean Air Act. Exhaust emissions from engine combustion can be identified through technical studies and targeted by state or county air pollution control measures.
- Encourage trucking companies to do their own proctoring. Reach out to busing companies, school districts, and truck stop owners to educate bus and truck drivers about the idling restrictions. Emphasize the fuel savings benefits, reductions in toxic emissions, and reduced engine wear associated with reducing idling. Provide information to fleet

carriers, shippers, retailers, bus companies, school districts, and others involved in the diesel fleet industry indicating the economic benefits, as well as the environmental benefits, of applying idle reduction technologies. Identify best practices within the industry and recognize companies with these best practices in place within Montana to encourage companies to select these carriers for their shipments.

- Develop outreach materials with cost benefits information and toxic diesel health effects in both indoor (cabin) and outdoor ambient air on both children and adults. Outreach materials should also be geared toward making the general public aware of the GHG, toxics, and fuel-saving benefits of eliminating unnecessary idling on personal (passenger) vehicles, as well as on trucks and buses. Expand the school bus idling program based upon the pilots currently being conducted.

### **Promotion and Marketing:**

- The state will establish idling time limits for heavy-duty vehicle at various venues (e.g., rest areas, truck stops, sporting events, etc.).
- The state will develop information packages about the health effects of air pollutants from the idling emissions on human health, particularly the drivers, in and outside the truck cab.
- This policy will be supported by the appropriate state agency with a dedicated, detailed web site. In addition to information and materials, participation in this policy by the various governmental agencies and individual businesses (i.e., success stories) would also be documented and extolled.

**Technical Assistance:** Coordinate with the impacted communities to organize workshops/outreach programs to let them know about technological options that provide alternatives to the need for idling including products for cabin comfort, power for other functions (e.g., refrigerated trucks), and engine warm-up.

### **Funding Mechanisms and/or Incentives:**

- Propose legislation to partially fund idling technology loan grants for truck stop electrification and other idle reduction technologies in the state, focusing grants on high idling areas. Determine a dedicated funding stream that can be used to fund enforcement of local anti-idling ordinances as well as for continued education and outreach. Funding the enforcing agency with an adequate share of the revenue from using the idling reduction facilities would be an option. CMAQ funds and federal money may be available for idle reduction programs if the truck stop or rest area resides within an EPA designated air quality “nonattainment” or maintenance area. A plan needs to be developed to apply for the funds.
- A small tax on diesel fuel might be considered as a means for funding truck stop electrification. Tax credits may be available for installing electrification through the National Energy Bill. Truck stop owners could offer their own incentives for the use of electrification (e.g., credits for free hours of electrification with the purchase of a specified amount of diesel).
- At the rest areas, individual meters could measure the amount of energy used by each trucker and the truckers could pay for the energy usages via a currency feed apparatus,

housed in a safe location, from the cost savings derived by the increased fuel efficiency not idling.

**Voluntary and or Negotiated Agreements:** Work with regulated entities to promote voluntary compliance assistance through distribution of materials, staff training, etc. Encourage participation in EPA’s SmartWay Transport Partnership (or similar programs). The SmartWay Transport Partnership is a voluntary collaboration between the EPA and the freight industry designed to increase energy efficiency while significantly reducing greenhouse gases and air pollution.

**Codes and Standards:** Include proper language in local and state ordinances so that the agency with enforcement responsibilities is clearly delineated and has full authority to enforce the ordinances. The language should also include any exemptions to the idling policy, which can be easily observed. In developing the statewide anti-idling ordinance, the EPA’s recent Model State Idling Law should be reviewed for potential ordinance language. For example, the EPA model rule contains the following language exempting vehicles used for emergency and public safety purposes: “A police, fire, ambulance, public safety, military, other emergency or law enforcement vehicle, or any vehicle being used in an emergency capacity, idles while in an emergency or training mode, and not for the convenience of the operator.”

**Pilots and Demonstrations:**

- Coordinate with product developers to help them promote their technologies. Investigate availability of funds for pilot or demonstration projects on idle reduction technologies from EPA, US Dept. of Energy, and US Dept. of Transportation. If funding is available, develop a pilot program to evaluate the effectiveness of various idle reduction technologies, including implementation of truck stop electrification and expanded school bus idling program. Evaluate the effectiveness of the pilot programs before implementing on a broader scale.
- If funding is not available for an in-state pilot demonstration, review other states’ successful anti-idling programs (currently sixteen) to extract all information applicable to a Montana program.

**Reporting:** Develop a system for tracking violations so that the state can eventually determine compliance rates. The amount of energy consumed from heavy-duty vehicle electrification at the rest areas and truck stops would be monitored to determine the amount of emissions reductions based on “before” and “after” installation analysis.

**Enforcement:** Phase enforcement program to initially conduct outreach (Phase I), provide warnings for a limited period of time (Phase II), then issuance of tickets (Phase III).

**Related Policies/Programs in place**

- Lewis and Clark County has Rule 3.101, which applies to both diesel and locomotive engines that limits the amount of idling time when the health department has declared poor air quality (idling is limited to 2 hours within any 12-hour period).
- Currently, the MDEQ has established a voluntary program called *Clean Air Zone Montana*. This program is aimed at reducing school children's exposure to vehicle emissions by discouraging idling of school buses and other vehicles, and helping schools obtain funding for bus maintenance and retrofitting.

- This option also supports progress toward EPA Strategic Plan Goal 1, Clean Air and Global Climate Change, Objective 1.1, Healthier Outdoor Air. The Regional Geographic Initiatives Program enables the Regions to work with states, local governments, and others in specific geographic areas on problems identified as high priorities by the Regions.
- In July 2004, the California Air Resource Board adopted a measure to limit diesel-fueled commercial motor vehicle idling (Resolution 04-23). Other states with anti-idling regulations include Arizona, Colorado, Connecticut, Hawaii, Maryland, Massachusetts, Minnesota, Nevada, New Hampshire, New Jersey, New York, Pennsylvania, Texas, Utah, and Virginia (see <http://www.arb.ca.gov/toxics/sbidling/appb.pdf>).

### **Types(s) of GHG Reductions**

Under Development.

### **Estimated GHG Savings and Cost Per Ton**

Under Development.

**Data Sources:** Under Development.

**Quantification Methods:** Under Development.

**Key Assumptions:** Under Development.

### **Key Uncertainties**

None Cited.

### **Additional Benefits and Costs**

None Cited.

### **Feasibility Issues**

None Cited.

### **Status of Group Approval**

Pending.

### **Level of Group Support**

TBD

### **Barriers to Consensus**

TBD

## TLU-9 Procurement of Efficient Fleet Vehicles

### Policy Description

Montana state and local government agencies would “lead by example” by enacting procurement policies and or joining the EPA SmartWay program and utilizing the SmartWay Upgrade Kits that result in adoption of lower emitting vehicle fleets. There are three primary components of the EPA SmartWay program: creating partnerships, reducing all unnecessary engine idling, and increasing the efficiency of light duty and heavy duty vehicles, rail, and intermodal operations.

The Hydrogen Energy Plan (HJ0026.ENR) has put the State on a path toward increasing the efficiency of, and use of alternative fuels in, the fleets of State and Private-owned vehicles. Relevant sections of that order require the following:

- By 2020, 100% of state-run vehicles must be powered by alternative/biofuels.
- By 2020, 50% of fuel used in all vehicles must be run by alternative fuels.
- Immediately, new vehicles must have the highest fuel economy for the intended use.

This policy option strengthens Montana’s commitment to reduce GHG emissions through fuel efficiency and use of biofuels in vehicles owned by the state while encouraging private fleets through incentive programs.

### Policy Design:

The CCAC recommends that Montana enact legislation that codifies the provisions of HJ0026.ENR and requires that the State increase its biofuels use in the State vehicle fleet to match the annual targets set forth in Option TLU-4 (Alternative Fuels Use). This is an enabling option that would have the State government lead by example, ensuring that its own fleet of vehicles meets or exceeds the targets set for the state as a whole.

**Goal Levels and Timing:** Where the fuel and vehicle-type requirements of TLU-6 are higher, the State vehicle fleet would conform to the higher requirements (e.g., hybrid purchases would be 10% of new vehicles in 2010, and use of ethanol and biodiesel would rise to 20% in 2020).

**Parties Involved:** Montana state and local government agencies, private industries and fleets, trucking industry.

### Implementation Mechanisms

#### Participation in EPA SmartWay Program:

State and local agencies with vehicle fleets could sign on as SmartWay carrier partners. They would then measure their environmental performance with the fleet model and come up with a plan to improve that performance. The partnership provides information and suggested strategies to improve fuel economy and environmental performance of vehicle fleets.

- *EPA SmartWay Shippers:* State or local agencies that buy transportation services or ship goods could sign on as SmartWay shippers. As shipper partners, state agencies would seek to select SmartWay partners when they purchased the services of carriers. One way

the state could help would be to add SmartWay certification to the list of factors that they may consider when selecting carriers. Alternatively, they could encourage the carriers that they do business with to join the partnership. Shippers can also implement direct strategies, for instance, developing no-idle policies for their loading areas.

- *SmartWay Affiliates:* State and local agencies could sign onto SmartWay as affiliates. As affiliates, they would help to distribute information on the program to interested parties. This could be as easy as putting a link on their web site, or it could involve a more active role.
- *EPA SmartWay Loan Initiative:* Incentives to reduce emissions in the trucking industry are also available through the EPA SmartWay Loan Initiative. The US Environmental Protection Agency is partnering with the Small Business Administration to make loans available to purchase SmartWay Upgrade Kits. This loan initiative uses SBA Express Loans and partners with Bank of America, Business Loan Express, Superior Financial Group, and other SBA lenders to help small trucking companies finance the purchase of SmartWay Upgrade Kits. Participating lenders will provide quick approval and affordable monthly payments. Small trucking firms can borrow from \$5,000 to \$25,000, with no collateral, an easy on-line or telephone application, and flexible loan terms.
- *SmartWay Upgrade Kits:* A variety of fuel and emissions-saving technologies, and typically consist of engine idle reduction technology, low rolling resistance tires, improved aerodynamics and exhaust after-treatment devices. In tests, these kits can reduce fuel consumption by 10 to 15 percent, saving more than \$8,000 in fuel costs annually. They also reduce pollution: carbon dioxide and nitrogen oxide emissions are cut 10 to 15 percent, and when a kit includes an exhaust after-treatment device, particulate matter emissions are reduced by 25 to 90 percent.

**Financial Incentives Program:** To assure the use of cleaner fuels and more efficient vehicles the state can set up a system to accrue “alternative fuel use credits.” Credit can be accrued through the use of biodiesel, ethanol, CNG, propane, hydrogen, electricity, and the purchase of advanced technology vehicles such as hybrid electric vehicles. The financial incentives program can be adopted from North Carolina’s legislation as described below:

Such legislation was introduced during the 2005 session (SB1148). Text from bill:

The State fleet shall accrue a total of 2,000,000 alternative fuel use credits during each calendar year 2006 and 2007. The State fleet shall accrue a total of 5,000,000 alternative fuel use credits during each calendar year 2008 and 2009. The State fleet shall accrue a total of 10,000,000 alternative fuel use credits during the calendar year 2010 and each calendar year thereafter.

(e) Formulas for Calculating Credits. – Alternative fuel use credits are calculated as follows:

(1) Subject to subdivision (2) of this subsection, one alternative fuel credit accrues for each one gallon of one hundred percent (100%) alternative fuel utilized by a State fleet vehicle. When alternative fuel is blended with petroleum-based fuel, the alternative fuel credit accrues for each one gallon of alternative fuel utilized by a State vehicle at a rate that is based on the percentage of alternative fuel that is utilized

by a State fleet vehicle. (For example, one alternative fuel use credit accrues for every five gallons of B20 that is utilized by a State fleet vehicle.)

Thus, in 2012, the goal of the state bill is to move 10,000,000 gallons of fuel from fossil to bio.

**Related Policies/Programs in place**

**Hydrogen Energy Plan:** The Montana Hydrogen Energy Plan aims to develop the hydrogen economy in Montana and establish Montana as a key state in the hydrogen economy. The Montana Hydrogen Futures Project has been established as the key economic development focus of the state, such that by the year 2020, 50% of all vehicles and equipment in Montana and 100% of all state-run vehicles will be powered by alternative fuels, all intercity bus systems will use hydrogen, distribution of synthetic fuels and hydrogen will be provided for the trucking industry, a school bus retrofit and hydrogen power program will be established, and incentives will be provided for converting internal combustion engines to operate on hydrogen. (Reference *House Joint Resolution* 26, 2003.)

**Types(s) of GHG Reductions**

Under Development.

**Estimated GHG Savings and Cost Per Ton**

Not Estimated. GHG emissions reductions estimates to be incorporated into analysis for other policy options.

**Data Sources:** Under Development.

**Quantification Methods:** Under Development.

**Key Assumptions:** Under Development.

**Key Uncertainties**

None Cited.

**Additional Benefits and Costs**

None Cited.

**Feasibility Issues**

None Cited.

**Status of Group Approval**

Pending.

**Level of Group Support**

TBD

**Barriers to Consensus**

TBD

## TLU-10 Transportation System Management

### Policy Description

The State of Montana would seek to reduce GHG emissions from the transportation sector through improvements to transportation system management. These efforts would focus on the improvement, management, and operation of the transportation infrastructure, with a focus on the roads and highway systems.

### Policy Design

Under Development.

**Goal levels:** Under Development.

**Timing:** Under Development.

**Parties Involved:** Under Development.

### Implementation Mechanisms

None Cited.

### Related Policies/Programs in place

Under Development.

### Types(s) of GHG Reductions

Under Development.

### Estimated GHG Savings and Cost Per Ton

Under Development

**Data Sources:** Under Development.

**Quantification Methods:** Under Development.

**Key Assumptions:** Under Development.

### Key Uncertainties

None Cited.

### Additional Benefits and Costs

None Cited.

### Feasibility Issues

None Cited.

### Status of Group Approval

Pending.

**Level of Group Support**

TBD

**Barriers to Consensus**

TBD

## TLU-11 Vehicle Backhauling Reduction

### Policy Description

Empty backhauls of freight vehicles consume significant amounts of fuel and produce carbon dioxide emissions. By using backhauls for productive deliveries, the overall miles driven per unit freight can be cut, along with fuel use and carbon dioxide emissions.

The state of Montana would seek to find efficiencies in vehicle backhauling for both light duty and heavy-duty vehicles. Efficiencies in backhauling of the light duty sector would focus on ride-matching programs for commute-to-work trips. Efficiencies in backhauling would focus on facilitating improvements to matching of goods movements with available capacity. These goods movement-matching systems would seek to match carriers with empty backhaul capacity with movement needs of shippers and seek to increase the capacity of LTLs (Less-than-Truck-Loads)

### Policy Design

Regular, for-hire common carriers already have cost based incentives to always run loaded. In addition, the freight broker industry already exists to match up truckers and loads.

Since deregulation in the 1980s, private carriers (those that haul their own goods) are already branching out and accepting more loads for hire on backhaul trips and are using sophisticated logistics to balance pick ups with deliveries. There are some national statistics indicating that private fleets may be running with about 25% empty capacity but with fuel prices and other costs rising, the companies are increasingly turning to marketing their unused capacity. About half now sell for-hire services - primarily to pay for backhaul costs. Since they don't have to maximize profits they create low cost competitors to the for-hire industry.

Two options for policies: make freight routing, scheduling and logistics software and services tax deductible, and encourage 24 hour shipping and receiving.

**Goal levels:** Reduce motor carrier backhauling by 5%. Trimming 1% of empty miles from one long haul truck can save over 100 gallons of fuel, cut greenhouse gas emissions over 1 metric ton, and increase ton-miles by nearly 20,000 per year.

**Timing:** Incremental progress to 2020 year.

**Parties Involved:** Private and for-hire motor carriers, shippers, manufacturers, freight brokers, truck drivers, third party logistics providers, local governments, Department of Revenue.

### Implementation Mechanisms

- Create incentives for the purchase of freight routing, scheduling and logistics software and services such as making them tax deductible or a tax credit.
- Support and encourage 24 hour shipping and receiving policies.

### Related Policies/Programs in place

Under Development.

**Types(s) of GHG Reductions**

Under Development.

**Estimated GHG Savings and Cost Per Ton**

Under Development.

**Data Sources:** Under Development.

**Quantification Methods:** Under Development.

**Key Assumptions:** Under Development.

**Key Uncertainties**

None Cited.

**Additional Benefits and Costs**

None Cited.

**Feasibility Issues**

None Cited.

**Status of Group Approval**

Pending.

**Level of Group Support**

TBD

**Barriers to Consensus**

TBD

## TLU-12 Off-Road Engines and Vehicles GHG Emissions Reductions

### Policy Description

Off-road (also called non-road) engines and vehicles are significant emitters of greenhouse gases (GHG) and consumers of petroleum based fuels. Emissions from off-road engines can be reduced by adoption of GHG emissions standards and through retrofit technologies. The efforts would be expected to be consistent with efforts to reduce off-road emissions of other regulated air pollutants. In the state of Montana, these reductions would affect the following equipment categories: airport service, construction, industrial, lawn and garden, light commercial, logging, recreational (including snowmobiles and snow coaches), and recreational marine.

### Policy Design

**Goal levels:** After the appropriate state agency has concurred, the state will adopt carbon dioxide (CO<sub>2</sub>) emissions standards for the various off-road equipment categories based on engine horsepower, within two years of when a municipality or another state has established such regulations.

### Timing:

- The state would lead by example by initiating a diesel retrofit program for 90% of the state-owned and leased off-road engines and vehicles by 2009.
- The state will implement a voluntary diesel retrofit program by 2009.
- The state will develop information about the emissions reductions from retrofit technologies on the various off-road engines and vehicles by 2009.

**Parties Involved:** Relevant industries, airports, general public, MT Dept. of Transportation, MT Dept. of Environmental Quality, local/county/federal governmental agencies.

### Implementation Mechanisms

- Emission control technology is now available to retrofit or rebuild existing engines for any kind of off-road diesel engine including marine.
- The state and some counties have the regulatory authority to require air pollution control measures in areas designated by the US Environmental Protection Agency (EPA) as “nonattainment” for air pollution under the federal Clean Air Act. Exhaust emissions from engine combustion can be identified through technical studies and targeted by state or county air pollution control measures.
- Construction contracts funded by the state and local communities would be required to use best available control technology (BACT) and other emissions mitigation measures for all diesel engines.

### **Promotion and Marketing:**

- The state would lead by example by initiating a diesel retrofit program for these equipment categories owned or leased by the state.
- Encourage local/county governments to act consistently with and support state actions.
- Encourage federal agencies located within the state to act accordingly with and support state actions.
- Encourage private businesses that use these types of equipment within the state to act accordingly with and support state actions.
- Encourage the airports located in the primary Montana cities to act accordingly with and support state actions.
- The state will develop information about the emissions reductions from retrofit technologies on the various off-road engines and vehicles.
- Implement a voluntary diesel retrofit program by an appropriate state agency; state tax incentives will be available at a later date corresponding to the new federal emissions standards of particulates and nitrogen oxides.
- The state will establish CO<sub>2</sub> emissions standards for the various equipment categories based on engine horsepower.
- All state-supported programs should have dedicated, detailed web sites. In addition to information and materials, program participation by the various governmental agencies and individual businesses (i.e., success stories) would also be documented and extolled.

### **Technical Assistance:**

- Contact the manufacturers of the various off-road emission reductions technologies to coordinate objectives and obtain technical support for outreach materials.
- The EPA has also developed the Voluntary Diesel Retrofit Program with a designated web site. The program will address pollution from diesel construction equipment and heavy-duty vehicles that are currently on the road today. The program web site is designed to help fleet operators, air quality planners in state/local government and retrofit manufacturers understand this program, and obtain the information they need to create effective retrofit projects.

### **Funding Mechanisms and/or Incentives:**

- The appropriate state agency would establish a voluntary program to retrofit diesel engines in a rebate program.
- Users of off-road diesel engines, who retrofit with emission controls, would qualify for a credit against Montana income or business taxes (whichever is relevant) to a percentage such as 25% of the retrofit costs.
- Funding for feebates and/or tax credits for new off-road engines and vehicles would be proposed through legislative action. These owners would qualify for a credit against Montana income or business taxes (whichever is relevant) to a percentage (such as 10%)

of the original costs (tax credit). Another option is to impose an additional fee as part of the engine maintenance costs, which would be based on the age of the engine.

- Funding may be available through the EPA Voluntary Diesel Retrofit Program, which will be dependent on the President's FY07 budget.
- Potentially, manufacturers may offer incentives to purchase new off-road engine and vehicles when the new emission standards become in effect (refer to the last section).

**Codes and Standards:** The state will rigorously review and research the CO<sub>2</sub> emissions standards for the various off-road equipment categories as established by another regulatory agency before adoption. The Manufacturers of Emission Controls Association will also be contacted for additional information.

**Pilots and Demonstrations:** Coordinate with product developers to help them promote their technologies for retrofit technologies.

**Reporting:** A tracking system will be difficult to develop since this is a voluntary program; however, if tax credit programs are initiated, emissions reductions can be estimated from both the installation of off-road retrofit technologies, and the acquisition of new off-road engines and vehicles.

**Enforcement:** No enforcement actions are necessary since this is a voluntary program.

#### **Related Policies/Programs in place**

The EPA promulgated the Clean Air Non-road Diesel Rule in 2004. The new emission standards apply to diesel engines used in most construction, agricultural, industrial, and airport equipment. The particulate and nitrogen oxides standards will take effect for new engines beginning in 2008, with interim standards in 2010, and fully phased in for most engines by 2014. This comprehensive rule will reduce emissions from off-road diesel engines by integrating engine and fuel controls as a system to gain the greatest emission reductions. Engine manufacturers will produce engines with advanced emission-control technologies similar to those upcoming for highway trucks and buses.

In addition, the EPA limited the fuel sulfur levels in non-road diesel fuel to prevent damage to the emissions control systems starting in 2007. The fuel sulfur levels will be limited to a maximum of 500 parts per million (ppm), the same as for current highway diesel fuel. Starting in 2010, fuel sulfur levels in most non-road diesel fuel will be reduced to 15 ppm.

#### **Types(s) of GHG Reductions**

Under Development.

#### **Estimated GHG Savings and Cost Per Ton**

Under Development.

**Data Sources:** Under Development.

**Quantification Methods:** Under Development.

**Key Assumptions:** Under Development.

#### **Key Uncertainties**

None Cited.

**Additional Benefits and Costs**

None Cited.

**Feasibility Issues**

None Cited.

**Status of Group Approval**

Pending.

**Level of Group Support**

TBD

**Barriers to Consensus**

TBD

## TLU-13 Intercity Travel: Aviation

### Policy Description

The State of Montana would seek to encourage to the federal government to take actions to reduce GHG emissions from the aviation portion of the transportation sector. Since the state and local governments do not have authority over in-air operations of aviation vehicles, the state would work with other states to encourage the United States federal government to take significant actions in this arena.

Working in cooperation with other state governments, the State of Montana would seek to develop and encourage a set of federal policies that would significantly reduce greenhouse gas (GHG) emissions reductions from the in-air operation of airplanes.

### Policy Design

**Goal levels:** Seek development of federal government policies to reduce GHG emissions from aviation.

**Timing:** Activities to begin immediately.

**Parties Involved:** Appropriate state government agencies.

### Implementation Mechanisms

None Cited.

### Related Policies/Programs in place

Under Development.

### Types(s) of GHG Reductions

Under Development.

### Estimated GHG Savings and Cost Per Ton

Not estimated. GHG emissions reductions would be calculated for the nation as a whole, and would be credited consistent with UNFCCC guidelines on a national basis.

**Data Sources:** Under Development.

**Quantification Methods:** Under Development.

**Key Assumptions:** Under Development.

### Key Uncertainties

None Cited.

### Additional Benefits and Costs

None Cited.

**Feasibility Issues**

None Cited.

**Status of Group Approval**

Pending.

**Level of Group Support**

TBD

**Barriers to Consensus**

TBD