

TLU-4 GHG Emission-Based Vehicle Ownership and Use (Financial/Market Incentives)

Policy Description:

The four components studied and developed under this option would create financial incentives for the purchase and operation of vehicles that emit lower levels of GHG.

Policy Design:

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:

1. *Feebates*. A multi-state “feebate” program, including the neighboring western states of Arizona, California, and New Mexico. 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.
2. *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.
3. *Labeling*. A consumer labeling program that provides buyers with better information on the GHG emissions of new vehicles.
4. *Incentives for Diesel Retrofits*. Such incentives would encourage the replacement of high-emitting diesel truck engines with newer, less polluting engines.

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

- **Goal levels:** Prepare a detailed study of options and impacts.
- **Timing:** Complete in 2008.
- **Parties:** Industry, MT DEQ, MDT, MT Department of Revenue

Implementation Mechanisms

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. 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, states in the southwest 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:

1. *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 U.S. 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.

Economic analyses of these proposals have found that feebate programs would work on two levels. First, the feebates would directly affect consumer choices for vehicle purchases as a result of the financial incentives. Second, the feebates could indirectly affect the types of vehicles that automobile manufacturers choose to put into the marketplace.

2. *Excise Taxes*. Examine options similar to Bill 2438 in the 2005 Massachusetts legislature¹ 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 CO2 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 percent (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.² New Mexico currently has a zero excise tax for hybrid cars.
3. *Labeling*. Examine options similar to an EU program begun in 2001, and a recent proposal by a researcher at Resources for the Future.³ It would require dealers to place a GHG label on each new vehicle that includes the estimated amount of CO2 (in pounds) produced annually and places the vehicle into one of five distinct groupings from "best" to "worst."
4. *Incentives for Diesel Retrofits*. Heavy-duty diesel engine emission standards were strengthened with the 2004 model year and will be even more stringent starting in the 2007 model year. However, a number of older, dirtier engines will still be in the fleet

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

² For a discussion of EU standards, see Pew Center, *Comparison of Passenger Vehicle Fuel Economy & GHG Emission Standards Around the World*, 12/04, http://www.pewclimate.org/global-warming-in-depth/all_reports/fuel_economy/index.cfm, pp. 11-12.

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

due to the long durability of heavy-duty truck engines. Retrofit controls can be applied to these older engines to reduce their emissions. These engines can also be rebuilt with engines meeting the latest emission standards, or retired and replaced by a newer, cleaner truck. Additionally, the use of biodiesel in these older engines can be used to reduce GHG emissions. Examine options that focus on heavy-duty diesel engines used by small owners/operators, as larger, national fleets typically require more rapid turn-over of heavy-duty diesel engines. Financial incentives and small business assistance could be used to assist small owners/operators to apply for grants or loans available for retrofitting or replacing their heavy-duty diesel engines, or converting their engines to run on biodiesel fuel. The focus would be on engines that otherwise would continue to be in use for a number of additional years.

Types(s) of GHG Benefit(s):

All GHG exhaust emissions through reduced fuel consumption.

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.

States such as Arizona, California, and New Mexico however are joining together to form a multi-state "feebate" program.

Estimated GHG Savings and Costs Per Ton:

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

Data Sources, Methods, and Assumptions:

CCS conducted a review of the most relevant research and analysis on feebate proposals. CCS made three findings:

- there has been significant conceptual development of the feebate idea, especially at the national level;
- there is a need for a greater understanding of potential benefits and costs of state level and multi-state coordinated feebate programs; and
- there has not been sufficient pilot testing of feebate programs in the United States to provide implementation experience.

CCS assessed recent studies of potential GHG emission reductions from a national feebate program based on modeling work conducted by the U.S. Department of Energy's Oak Ridge National Laboratory (ORNL). CCS also reviewed other relevant recent studies and analyses of feebates conducted by the Canadian government, the State of California, and PIRG. The ORNL and other studies assume a national feebate rate high enough to produce responses from both consumers and manufacturers. ORNL's estimate of the national potential for reduction in carbon dioxide emissions is approximately 11

MMtCO₂e in 2010 and 66 MMtCO₂e in 2020.

Some attempts have recently been made to estimate the GHG emissions reduction potential from individual state feebate programs, including programs proposed for the states of Arizona and California. For example, a recent PIRG analysis suggests that a single state feebate program for Arizona would result in an estimated 0.1 MMtCO₂e GHG emissions reductions in 2020. These recent estimates of the potential impacts of individual state programs are contingent upon assumptions and analytical methods that have not undergone thorough peer review. Therefore, the results of these analyses are preliminary and should be interpreted with some caution. Further analysis and study of the potential benefits and costs of individual state and multi-state feebate programs would greatly increase confidence in projected results.

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 identified.

Feasibility Issues:

Requires multi-state cooperation.

Status of Group Approval:

TBD

Level of Group Support:

TBD

Barriers to Consensus:

TBD