



A Rule-Based Gasohol Consumption Estimation Model

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Under the sponsorship of the U.S. DOT Federal Highway Administration (FHWA), Oak Ridge National Laboratory (ORNL) has developed a gasohol consumption estimation model using a series of decision rules (referred to as the rule-based model). This model uses data from the Internal Revenue Service, Energy Information Administration, Environmental Protection Agency, FHWA, and other sources.

Why Is the Consumption Information Needed?

State-level motor-fuel use data is used in attributing the Highway Trust Fund (HTF) receipts to highway users in each State by FHWA. Knowledge about the distribution of gasohol usage across the States is important because gasohol is a significant component of motor fuel. Gasohol tax revenue contributed about \$2 billion to the HTF in 2003.

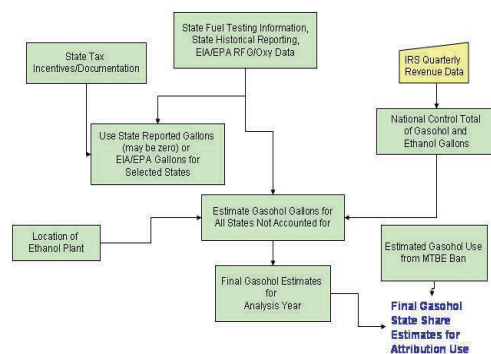
Account of the HTF about one-half as much as a gallon of gasoline. Consequently, States with significant gasohol use pay less into the HTF than States that do not have gasohol consumption.

Why Modeling?

The Federal law defines three blends of gasohol (i.e., alcohol content of 5.7% to less than 7.7%, 7.7% to less than 10%, and 10%) and each is taxed at a different rate. Very few States, however, recognize the Federal definitions of gasohol. Most States consider only the 10% blend as gasohol. Some States define gasohol as reformulated gasoline, not as an ethanol blend. Furthermore, most States tax gasohol at the same rate as gasoline, and the tax receipts are combined for these fuel types. Consequently, States are not able to furnish data with the level of detail required by FHWA.

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Processes in the Rule-Based Gasohol Estimation Model



Major Processes in the Rule-based Model

The rule-based gasohol estimation model was implemented as a spreadsheet application for ease of use by the FHWA. There are three major processes in this model:

- computing the control total from the amount of revenue collected by the U.S. Treasury Department;
- determining gasohol usage for States that have sufficient information; and
- estimating the gasohol usage for all remaining States.

Under the current tax structure, a gallon of gasohol pays into the Highway

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