

TLU-10 Fuel Strategies]

Policy Description:

Most agree that the increased use of renewable fuels typically results in less GHG emissions. Iowa's long standing 10% ethanol blended fuel has displaced billions of gallons of gasoline over the course of its use in Iowa. Iowa currently leads the nation in ethanol and biodiesel production and has created numerous incentives to continue blending renewable fuels. Most of these incentives are designed to give renewable fuels a price advantage over conventional gasoline and diesel. Currently, over 70% of all gasoline used in Iowa is 10% ethanol.

The recent implementation of EPA's Renewable Fuel Standard has created an enormous demand for Iowa's renewable fuels across the country. State renewable fuel exports will continue to grow as other states begin formalizing their own state standards for renewable fuels and GHG controls.

Both the State of Iowa and the EPA have imposed Renewable Fuel Standard (RFS) programs on industry. The state and federal RFS programs mandate that a certain volume of renewable fuels be produced and consumed by a future date.

In Iowa, the RFS projects a retail dealer's biofuel percentage, based on a graduated scale, to 25% by the year 2019. The Iowa RFS begins in the year 2009, with the first eligible 6.5 cent tax credit available during 2010 filings. A retail dealer who meets the 10% threshold in 2009 will be eligible for the full 6.5 cent tax credit in the year 2010. The Iowa RFS biofuel thresholds are as follows:

2009-10%;
 2010-11%;
 2011-12%;
 2012-13%,
 2013-14%;
 2014-15%;
 2015-17%;
 2016-19%;
 2017-21%;
 2018-23%;
 25% for each determination period beginning January 1, 2019

In December 2007, President Bush signed the Energy Independence and Security Act of 2007 creating a Federal Renewable Fuel Standard (RFS). The Federal RFS mandates that by the year 2022 36 billion gallons of renewable fuels are used in the United States (current use is estimated at 7.5 billion gallons). The standard is laid out to not only increase the production and use of renewable fuels, but also to reduce greenhouse gas emissions. The standard specifies a 50% reduction in GHG emissions from biomass based diesel and advanced biofuels; a 20% reduction in GHG emissions from renewable fuels; and a 60% reduction in GHG emissions from cellulosic biofuel as compared to the GHG emissions created by burning traditional fossil fuels.

In order to achieve the goals laid out in the Iowa Renewable Fuel Standards, the following areas within the renewable fuel industry need to be developed:

Marketability of Renewable Fuels

In order to expand and move renewable fuels forward, it is suggested that an earnest attempt be made by legislature as well as the Midwest Governor's Association, to create incentives for the purchase of passenger vehicles utilizing diesel technologies and E85 (flex-fuel). Current data shows that approximately 86,000 of the 4.1 million vehicles registered in the state of Iowa are flex-fuel capable. This means that 98% of the vehicles in Iowa are not capable of operating on ethanol blends greater than E10. From a business perspective it is difficult to justify installing an E85 dispenser, piping, and tanks without the demand for the product. The economics of marketing E85 simply do not work in the majority of the markets statewide because of the lack of flex-fuel vehicles. Additionally, consumers who own flex-fuel vehicles are only filling up with E85 once or twice on average. The most obvious reason for this is the significant decrease in miles per gallon when comparing E85 with conventional gasoline or E10. Current data suggests that, even in Iowa's metropolitan areas, renewable fuels usage is limited. Retailers who currently offer E85 have reported favorable preliminary sales but very little repeat business.

The focus to drive E85 has been directed at marketers and the installation of E85 dispensers. This logic is flawed. The focus needs to be placed on the manufacture and sale of flex-fuel vehicles, creating a viable source of demand for E85. Without the demand for the product marketers are going to be unlikely to make significant infrastructure investments to market the product. Additional obstacles include the listing of dispensers for E-blends greater than 10% by Underwriters Laboratory. Currently, marketers retailing E85 are doing so under a waiver from the State Fire Marshall. The waiver language allows marketers to continue retailing E85 pending the release of a UL listed dispenser at which time marketers will be required to upgrade to equipment that is UL listed. Without a UL listing for E85 dispensers, marketers who put in this type of dispenser take on the potential for enormous liability if the alcohol content in E85 or other E-blends causes corrosion or other detrimental effects on the dispenser and a release of product occurs. UL listing of these dispensers is anticipated, but until a listing is made, marketers must factor the liability potential into their business model. According to UL engineers, no definitive timetable is available for the pending listing of E-blend dispensers.

Mid-Grade Ethanol Blends

Future policy should be to encourage EPA to finalize studies of mid-level ethanol blends (blends > E10). Mid-level ethanol blends decrease the energy disparity between conventional gasoline and E10 when compared to E85. Consumers may find these mid-level blends to be a much more

attractive product. Current obstacles to the marketing of mid-grade ethanol blends include: The number of flex-fuel vehicles on the road in Iowa; UL listing for dispensers dispensing blends greater than E-10 and potential liabilities associated therein; EPA study and approval of blends greater than E-10 (also required by Iowa Code before retailer may sell); Clean Air Act provision regarding liability for rendering an emissions control device inoperable; auto manufacturers warranties, and the potential liability placed on a marketer in the event that a consumer is harmed by a mis-fueling incident.

Renewable Fuels Industry Growth

Policy Design:

Marketability of Renewable Fuels

Create incentives for the purchase of passenger vehicles utilizing Flex-Fuel capability and also diesel technology.

Mid-Grade Ethanol Blends

Encourage EPA to finalize studies of mid-level ethanol blends (blends > E10).

Renewable Fuels Industry Growth

Investigate a severance tax on natural resources and co-products produced in Iowa, the tax could be allocated to help facilitate the expansion of the industry. Programs to be potentially funded with this revenue could include:

- implementing greater carbon neutral renewable fuels production
- land conservation practices/education
- renewable fuels infrastructure re-investment to help meet the goals and standards already in place

The continued development and prosperity of the biofuels industry in Iowa is going to cost money. Iowa is already experiencing drastic revenue shortages for its infrastructure. As the industry matures, and the rapid growth which is mandated begins to take effect, the group anticipates that increased funding will be needed to allocate towards natural resource development and preservation, as well as infrastructure expansion and repair. Although a significant portion of the biofuels produced in Iowa are exported out of state, Iowans are left holding the bill for the depletion of our natural resources and infrastructure. A severance tax on Iowa's natural resources could be allocated to funding some of these areas and help facilitate the expansion of the biofuels industry into the future. A severance tax on Iowa's natural resources would attempt to spread these costs out proportionately amongst those benefiting from Iowa's natural resources. As a potential model, Wyoming has a severance tax on its minerals lifted from the ground, including coal, oil, and natural gas. The idea behind the severance tax in Wyoming is to spread the costs of extraction and depletion onto those who benefit from Wyoming's assets. The severance tax revenue generated is then re-invested into Wyoming's economy

Implementation Mechanisms

-Function of Iowa Revenue Department and EPA

Related Policies/Programs in place:**Renewable Fuels Standards (U.S. and Iowa)**

Iowa's state renewable fuel standard is the most progressive standard in the country. The standard will be implemented beginning in the calendar year 2009 with incentives eligible in 2010. The Iowa standard, in cooperation with the Federal RFS, guides production and sets goals for renewable fuel use over a span of 14 years.

Goal levels:

- 25% biofuel sales in Iowa by 2019.
 - 36 billion gallons produced in the U.S. by 2022
 - 50% reduction in GHG emissions from biomass-based diesel and advanced biofuels
 - 20% reduction in GHG emissions from renewable fuels
 - 60% reduction in GHG emissions from cellulosic biofuels
- (Goals defined in Iowa RFS and the 2007 Energy Independence and Security Act)

Timing: Achieve by 2022 under the Federal RFS and 2019 under Iowa RFS

Parties Involved: Federal Government, State Government, Producers, Marketers, Blenders, Consumers, and Refiners.

Infrastructure

For the past three years, Iowa has been building its renewable fuel infrastructure for retail sites as well as points of bulk distribution.

The Renewable Fuels Infrastructure Board oversees the funding of biodiesel bulk facilities to create an extensive distribution network for biodiesel. The RFIB also funds retail locations that require new equipment for E85 due to incompatibility issues with existing equipment (moving from a hydrocarbon based fuel to an alcohol based fuel). This program is administered by the Iowa Department of Economic Development.

Iowa Power Fund

Money allocated by the Iowa Legislature over four years to be invested into Iowa's plan for energy independence.

Estimated GHG Savings and Cost Per Ton:

See accompanying documentation from Environmental Protection Agency as related to the GREET model and GHG lifecycles.

	2012	2020	2050	Units
GHG Emission Savings				MMtCO ₂ e
Net Present Value (2008-2050)				\$ Million
Cumulative Reductions (2008-2050)				MMtCO ₂ e

Cost-Effectiveness					\$/MtCO ₂ e
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- Data Sources: U.S. EPA, Federal Government, State Government
- Quantification Methods: GREET Model
- Key Assumptions: Note EPA variables in determining GHG lifecycles for renewable fuel production. (vegetation disruption, energy inputs for production facilities, etc)
- Anticipate EPA publishing projected Lifecycle GHG offsets from the 2007 Energy Independence and Security Act in April 2009???

Key Uncertainties

- Very small number of Flex Fuel Vehicles in Iowa (<1% of vehicles registered in Iowa are FFV)
- Public (end-users) apprehension regarding the use of biodiesel during winter months as well as the energy disparity with high blends of ethanol.
- Advanced Biofuels Technology, required energy input at production facilities, infrastructure management, production capacity to meet the Iowa and Federal RFS.
- Impacts associated with renewable fuel availability as the Federal RFS increases through the year 2022 and individual states implement their own RFS programs and incentives.
- Development and growth of hybrid fuel cell vehicles
- Biofuel-producing algae

Additional Benefits and Costs

Feasibility Issues

TBD

Status of Group Approval

TBD

Level of Group Support

TBD

Barriers to Consensus

This subcommittee believes it is necessary to facilitate the long-term growth of renewable fuels in order to reduce GHG emissions. Additionally, numerous parties must be involved in any discussion involving any new tax proposals relative to renewable fuels.

One committee member expressed concerns about the statements made in the document about E85. The member disagrees that E85 sales are sluggish, and disputes the energy content discrepancy between E85 and E10. The member also believes that any change in future policy should not discredit marketers who have invested in E85.

There was also a point of contention regarding the proposal to explore a severance tax in Iowa. One member of the committee noted that it seems that the tax punishes producers and/or consumers who are choosing to produce, purchase and use a product that will reduce greenhouse gas emissions which seems contrary to the intent of the Climate Change Council.