

## Economic Benefits of a Clean Fuels Policy in Minnesota and Iowa

The Great Plains Institute and the American Coalition for Ethanol, with support from the McKnight Foundation and the Union of Concerned Scientists, commissioned ICF to conduct an economic impact assessment of a clean fuels policy (CFP) for Minnesota and Iowa using the IMPLAN economic input output model.

Economic modeling for a 15% carbon intensity reduction in transportation fuels shows net positive impacts for every year that the clean fuels policy is in place. The total benefits of the program increase by an average of 19% each year. Table 1 shows the average annual modeled economic benefit assuming a 15% carbon standard intensity reduction.

Over a policy period of ten years, the clean fuels policy would generate \$946 million in labor income and 14,975 job-years in Minnesota and Iowa. One job-year is the equivalent of one full time job for the duration of one year. Across these two states, the program would contribute \$1.98 billion to regional gross domestic product (GDP) and generate \$10.3 billion in regional economic output. This equates to an annual average of nearly 1,500 jobs and \$95 million in labor income, with an annual contribution of over \$197 million to GDP. Additionally, a clean fuels policy would generate an annual average of \$13 million in state and local tax revenue, and \$33 million in federal tax revenue. Table 2 shows a summary of the high-level results from the economic modeling by economic benefit and impact type.

**Table 1: Summary of economic benefits from a 15% CFP**

Type	Average Annual Impact 2021 – 2030	10-year total
<b>Output impacts</b>	<b>\$1.03 billion</b>	<b>\$10.33 billion</b>
<b>Value added</b>	<b>\$197 million</b>	<b>\$1.98 billion</b>
<b>Employment</b>	<b>1,498 annual full-time equivalent (FTE)</b>	<b>14,975 job-years</b>
<b>Labor income</b>	<b>\$95 million</b>	<b>\$946 million</b>
<b>State and local tax impact</b>	<b>\$13 million</b>	<b>\$125 million</b>
<b>Federal tax impact</b>	<b>\$33 million</b>	<b>\$334 million</b>

*Note: All dollar values are presented in 2019 USD.*

Economic impacts of the clean fuels policy occur due to direct, indirect, and induced types of activity, such as:

- Direct impacts on the primary industries where spending occurs, such as expenditures on fuel production, vehicle purchases, and infrastructure.
- Indirect impacts on industries that interface with the primary industries such as material or service sales to industries that dispense fuels, vehicles, or infrastructure.
- Induced impacts such as increased spending by workers on food, housing, education, and healthcare.

A variety of industries within the region see beneficial economic impacts from value added to their product, additional labor income and employment, and increased total output due to demand for lower carbon alternative fuels. On the consumer side, gasoline users and customers see a total economic benefit of \$726 million over 10 years from cost savings due to lower cost fuel blends.

**Table 2: Economic benefits by impact type over ten years**

Sector	Labor Income \$ million	Value Added \$ million	Total Output \$ million	New Employment (Avg. annual FTE)
<b>Biodiesel producers &amp; farmers</b>	\$32.43	\$46.03	\$91.80	56
<b>Electricity sales</b>	\$706.11	\$1,769.56	\$4,125.22	834
<b>Ethanol producers &amp; farmers</b>	\$30.57	\$40.46	\$137.37	31
<b>Renewable diesel producers</b>	\$5.39	\$9.36	\$16.22	11
<b>Renewable Natural Gas producers</b>	\$99.30	\$126.17	\$439.84	82
<b>Diesel consumers (Trucking)</b>	\$725.09	\$1,104.89	\$2,134.04	1,343

*Note: All dollar values are presented in 2019 USD, \$ millions.*

## Study Methodology and Assumptions

The IMPLAN model was used for this study. A clean fuels policy market credit price of \$100 per ton of CO<sub>2</sub>-equivalent greenhouse gas emissions was assumed based on historical price trends in existing clean fuels markets. The configuration of the IMPLAN model used for this analysis offsets compliance costs for gasoline and diesel users by holding fuel prices neutral through lower-cost clean fuels. Economic impacts are assumed to occur because:

- Increased use of lower-cost clean fuels cause fuel savings for consumers, which turns into increased household income and cost-savings for fleet operators.
- The increased expenditures to expand and modify the production of biofuels to meet higher blend targets and to invest in the reduction of carbon intensity of biofuel production.
- Increased expenditures in fuel distribution and retail infrastructure allows for the increased sale of various biofuels blends.
- Increase in expenditures to expand production of electricity for electric vehicles.
- Increased purchases of feedstock and payments to farmers for climate smart practices result in greenhouse gas benefits and increased income for farmers.

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